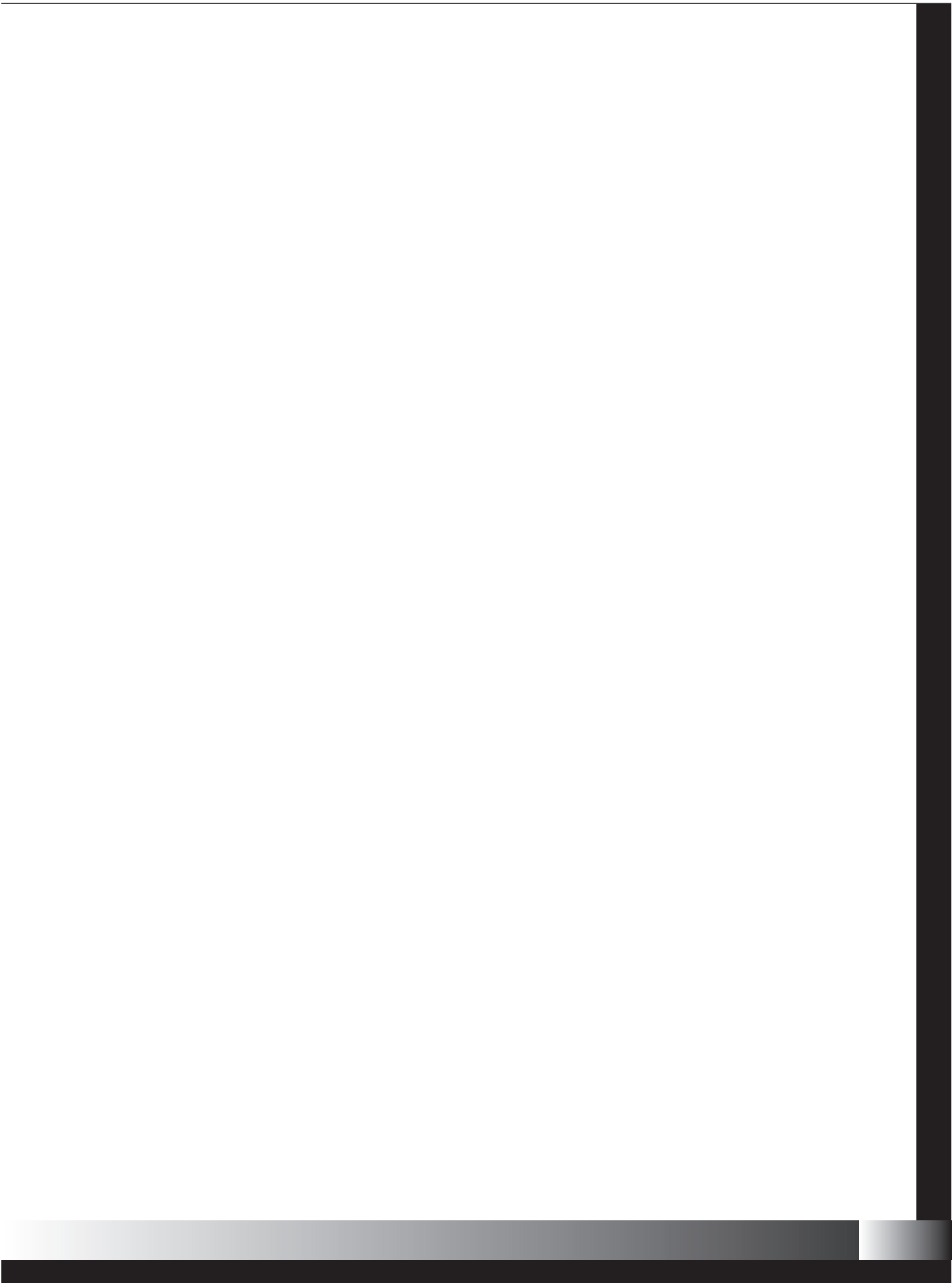




Chapter Nine IMPLEMENTATION PLAN



Chapter Nine

IMPLEMENTATION PLAN

The previous chapter of the PAG RASP identified those actions and projects needed to enable the Regional Aviation System to perform at target levels. In some instances, the projects or actions were identified to enhance the System's performance relative to individual benchmarks identified for each of the RASP performance measures. In other instances, the projects or actions are associated with improvements considered desirable relative to each airport's ability to comply with RASP facility and service objectives.

This final chapter of the PAG RASP provides guidance on the priorities that should be placed on raising the System's overall level of performance. This chapter summarizes systemwide actions or follow-on activities that should be considered if the System is to reach the target performance objectives established by the Study Task Force. Finally, this chapter summarizes recommendations for each System airport.

Implementation Priorities

At the onset of the RASP, a series of goals for the Regional Aviation System was established. These goals were then translated into performance measures that were used in the RASP to direct the evaluation of the System's current performance. Benchmarks specific to each of the six performance measures were identified and used to gauge the System's current performance.

Intuitively, not all goals for the Regional Aviation System, as well as the performance measures implied in these goals, are of equal importance. Some goals/performance measures should be given higher priority and emphasis as PAG, airport owners, ADOT, and FAA work cooperatively to enhance the Region's system of airports.

As with the establishment of goals, performance measures, and benchmarks for the PAG System of airports, input from the Task Force for the RASP was sought in order to establish implementation priorities. In the process to establish implementation priorities, members of the Task Force were called upon to assign importance weightings to each of the six RASP performance measures. The Task Force assigned weightings to each of the performance measures, with the sum of the weightings for all measures totaling 100 percent. The results of this process are depicted in **Exhibit 9-1**. The percentage weightings assigned by the Task Force were used to establish implementation priorities shown in this exhibit.

Exhibit 9-1
PRIORITY MATRIX
Page 1 of 2

Importance Weighting	Implementation Priority
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Capacity 25%		L	M	H
	Plan for airports to operate under 60% demand/capacity	44.4	44.4	11.1
	Provide facilities to keep airports under 80% demand/capacity *	12.5	12.5	75.0
	Provide hangars/covered storage to meet facility objectives	22.2	33.3	44.4
	Provide auto parking to meet facility objectives	22.2	44.4	33.3

Standards 20%		L	M	H
	Meet FAA runway/taxiway separation standards *	0.0	22.2	77.8
	Meet RSA established by FAA *	0.0	11.1	88.9
	Meet ADOT PCI guidelines for primary runway pavement	0.0	33.3	66.7
	Plan future projects to limit airspace overlaps	0.0	44.4	55.6
	Resolve and limit manmade obstructions impacting approaches *	0.0	11.1	88.9

Economic Support 20%		L	M	H
	Increase departing airline seats to top O&D markets	11.1	33.3	55.6
	Increase departing airline seats to all markets	11.1	22.2	66.7
	Maintain market's average one-way airline fare as % of U.S. average	11.1	33.3	55.6
	Increase number of airports with Part 135 on demand charter service	11.1	66.7	22.2
	Maintain number of airports with air cargo service	11.1	33.3	55.6
	Maintain number of airports in the System with runway of $\geq 5,000$ ft.	0.0	55.6	44.4

Compatibility 15%		L	M	H
	Develop current Part 77 surfaces	0.0	55.6	44.4
	Take steps to work with communities to adopt Part 77	0.0	44.4	55.6
	Work to have airport recognized in local comprehensive plan	0.0	44.4	55.6
	Have current master plan *	0.0	22.2	77.8
	Have current noise contour	11.1	33.3	55.6
	Have ADOT-mandated Airport Influence Area Map	22.2	33.3	44.4
	Work with community to adopt public disclosure on ADOT map	22.2	33.3	44.4

* = Benchmarks given highest priority by Task Force

Exhibit 9-1
PRIORITY MATRIX
Page 2 of 2

Importance Weighting		Implementation Priority		
Financial Responsibility 25%		L	M	H
	Have full-time, on-site staff	11.1	33.3	55.6
	Maintain privately owned airports in the system at current level	33.3	44.4	22.2
	Have current business/financial plan	11.1	55.6	33.3
	Have local financial support (O&M costs and contribution for grants)	0.0	33.3	66.7
	Have current rates and charges	11.1	33.3	55.6
	Have recent land appraisal to show value of airport property	33.3	33.3	33.3
	Have current minimum standards for operating and development	0.0	55.6	44.4
Accessibility 20%		L	M	H
	Maintain number of airports with \geq 5,000-foot runways	0.0	44.4	55.6
	Provide published approaches to all Level I airports *	0.0	22.2	77.8
	Accommodate special-use aviation at Level II and private airports	44.4	22.2	33.3
	Provide public transportation to Marana Northwest Regional	33.3	44.4	22.2
	Maintain System's current intermodal transfer capabilities	0.0	44.4	55.6
Total 100%				

* = Benchmarks given highest priority by Task Force

As shown, the Task Force for the RASP indicated that projects related to meeting the System goal of having airports that provide adequate airside and landside capacity should be given the highest priority for implementation. The Task Force gave the second-highest priority ratings to the goal for having a System that meets applicable FAA and ADOT planning/development standards and guidelines. The third-highest rating was given to the goal for encouraging a System that supports the Region's needs driven by economic growth and diversification. In terms of priority, the Task Force rated the goal to have a System compatible with the human and natural environment the fourth highest among the six performance measures. The final two performance measures for financial responsibility and accessibility were ranked last from a priority standpoint.

The prioritization of goals for the System and their related performance measures provides guidance on what types of projects should, according to the RASP Task Force, be given the greatest amount of consideration. As individual airports in the System proceed with their development, and as ADOT proceeds with, and updates, its Statewide capital improvement program (CIP), projects and actions falling under those performance measures that have received the highest rankings should be given preference for implementation and funding.

In addition to identifying the priorities that should be placed on enhancing the System's performance as it relates to each of the RASP goals/performance measures, the Study Task Force also provided guidance on the relative priority that should be given to actions/projects needed to reach target compliance objectives for each Study benchmark. For each of the RASP benchmarks, the Study Task Force assigned benchmarks to a high-, medium-, or low-priority category, as it relates to the urgency or need to address particular deficiencies or shortfalls in the System. The results of this ratings process are also shown in Exhibit 9-1.

This matrix provides information on the relative weighting that the Task Force placed on each of the benchmarks. While many of the benchmarks cumulatively scored in the "high" category, it is apparent when the relative ratings are considered that the Task Force placed a higher priority on certain benchmarks. As shown, for the Capacity performance measure, the benchmark to ensure that System airports have adequate airfield capacity to keep them operating under an 80 percent demand/capacity ratio was given the highest priority.

For the Standards performance measure, all benchmarks were given a "high" rating. However, from reviewing the information contained in Exhibit 9-1, it is evident that the Task Force felt the highest priority should be given to actions and projects allowing System airports to meet their FAA-mandated runway and taxiway separations, as well as their FAA-mandated runway safety areas (RSAs). Under this same performance measure, the Task Force also indicated a high priority should be given to projects and actions that would reduce or prevent airspace overlaps negatively impacting the approach to a RASP airport. Generally speaking, as reflected in Exhibit 9-1, the Task Force assigned the greatest importance to individual benchmarks for the Standards performance measure, even though the Standards measure received a slightly lower ranking than the Capacity performance measure.

Under the Economic Support performance measure, the Task Force gave the highest priority to the benchmark for increasing the market's number of total departing seats on commercial airlines. It is worth noting that the relative importance assigned by the Task Force to this benchmark is lower than the priority given by the Task Force for benchmarks associated with the two previous performance measures. Generally speaking, the ratings and resultant rankings that the Task Force placed on benchmarks for the Economic Support performance measure showed these benchmarks, from a System standpoint, should receive a lower priority.

For the Compatibility performance measure, the Task Force indicated, through its rankings, that the highest priority should be placed on projects that would provide System airports with current master plans. As will be discussed in the next section of this chapter on continuous planning, individual airport master plans provide a vehicle for airports in the System to obtain resources and information needed to make them compliant with several Study benchmarks.

For the Financial Responsibility performance measure, the Task Force placed the highest priority on the benchmark related to local owner/sponsor financial contribution. The benchmarks for financial/business plans and minimum operating/development standards were rated as being of “medium” priority. For the final performance measure, Accessibility, the Task Force placed a high priority on ensuring that a published approach is provided to all Level I airports in the PAG System.

System Recommendations/Continuous Planning

In their advisory circular on aviation system planning, the FAA recognizes the need for continuous planning as part of an effective system planning process. Continuous system planning is typically comprised of the following five elements:

- Surveillance
- Reappraisal
- Service and Coordination
- Special Studies
- Updates

These five continuous planning elements, as they relate to the PAG RASP, are discussed in the following sections.

Surveillance

Aviation is a dynamic and fluid industry, one that is constantly changing. As aviation changes, the System of airports supporting aviation demand will also continue to change. As part of the continuous planning process, surveillance is recommended as it relates to demand components and to facilities/services.

As part of the RASP, data on a number of demand indicators for System airports have been assembled; these include statistics on aircraft based at each airport in the System, total annual aircraft takeoffs and landings at each airport, and total annual boarding commercial passengers (Tucson International Airport only). As part of the continuous planning effort, the following actions should be taken:

Activity Indicators

- PAG should use the base data on total annual operations and based aircraft that have been assembled and documented from the RASP to establish an informational database. PAG should contact each airport in the System annually to obtain updated information on total based aircraft and annual operational levels. For consistency, collecting this updated information should occur at the same time each year; March is typically a good time frame for collecting information for the previous calendar year.
- This “activity database” should also contain information for Tucson International on their total annual enplanements and total annual operations (for all facets of activity including commercial, general aviation, and military). Updated information from Tucson International can be used to

determine which track the airport is on related to the two enplanement projections developed in the RASP. Total annual operations for this airport are important for tracking critical demand/capacity ratios, since this is the only System airport projected to reach, or possibly to exceed, the critical demand/capacity ratio of 80 percent.

- Follow-on activities for System airports on their specific operating fleets are also desirable. The future planning and development of all airports in the System is largely contingent on the specific types of aircraft operating at these airports. Ideally, PAG should work with and encourage System airports to keep an operational log, especially for transient (visiting) aircraft. Each airport's planning and development guidelines are determined by the most demanding (critical) aircraft that operates at the airport on a regular basis. The FAA defines "regular basis" as being 250 takeoffs and landings per year, or 500 total operations. Each airport's airport reference code (ARC) is determined by its critical aircraft. To move up to a more demanding ARC, the FAA/ADOT often require documentation on critical aircraft operations. Logs and photo journals on the types of aircraft operating at each airport and the frequency of their operations are important to establishing future ARCs for all System airports. Therefore, this action is recommended as part of the continuous planning process for the RASP.

Facilities/Services

- Airports within the PAG System will continue to develop between the completion of this update of the RASP and the next update in five to seven years. System airports should be asked to provide PAG with major facility enhancements that are accomplished following the conclusion of this Plan. Facilities that should be included in this reporting process include: runways (new and extended); taxiway improvements (in particular as they relate to new, upgraded, or lengthened parallel taxiways); airfield lighting and approach aids; and aircraft hangars or covered storage.
- Specific service-related guidelines were also established in the RASP, and a process to collect and update airport-specific services should be considered. In particular, information on fueling and FBO availability and services should be updated.

The PAG RASP has been accomplished using a performance-based approach to evaluate the Regional Aviation System. The major output of this approach is the System "report card." This report card provides sustainability to the planning process. As part of the continuous planning effort, the System report card can be updated if PAG is able to refresh system data and information, particularly on activity and facilities/services.

Reappraisal

Airports in the System will continue to grow and, as they grow, conclusions drawn as part of this RASP may need to be reevaluated. Two of the key System descriptors that need to be monitored as part of the continuous planning effort are airport-specific ARCs and demand/capacity ratios. These two factors were critical in the process to determine how well the System is performing; if these descriptors change over time, conclusions drawn in this RASP may need to be reassessed.

As part of its follow-on activities, PAG should contact System airports at least annually to determine any changes or potential changes to each airport's airport reference code (ARC). The ARC is the critical variant in assessing each airport's ability to meet RASP benchmarks as they relate to the Standards performance measure. This performance measure was ranked as being of high priority by the RASP Study Task Force. Even more highly ranked by the Task Force was the Capacity performance measure. As airports in the System complete various airfield-related projects, it is possible that their annual service volume (ASV) may increase. Likewise, as demand (annual operations) at System airports continues to grow, airports may reach critical FAA demand/capacity ratios analyzed in the RASP.

As part of the continuous planning process for the RASP, an effort should be made to collect and maintain the following information:

- Current and planned airport reference code (ARC)
- Current and planned annual service volume (ASV)
- Current annual operational demand
- Current demand/capacity ratio

These indicators for all System airports should ideally be reviewed and updated annually.

Service and Coordination

As part of the continuous planning process, there are appropriate follow-on coordination and communication activities. Some of these activities are between PAG and the System airports, some are between PAG/ADOT and the FAA, and others are between the airports and ADOT/FAA. Continuous planning efforts in this category may be summarized as follows:

- **Implementation Priorities** - The RASP has established a hierarchy of priorities as they relate to RASP performance measures/goals and Study benchmarks. As System airports proceed with their individual development and planning, consideration should be given to projects needed to move the System toward target objectives established in the RASP. Particular emphasis should be placed on projects needed to meet the Capacity and Standards performance measures. In addition, emphasis should be placed on projects that address "key" benchmarks previously identified in Exhibit 9-1.
- **Pavement Management** - ADOT has established a Pavement Management Plan for all public airports in the Arizona System. Meeting pavement condition index (PCI) ratings established by ADOT on primary runways at all System airports is a RASP objective. Follow-on coordination with ADOT, PAG, and individual System airports is needed to ensure that steps are being taken to make airports compliant with both ADOT- and PAG-established objectives for PCI.
- **Special-Use Aviation** - It is a recommendation of the RASP that special-use and sport aviation be discouraged from Level I airports. As noted in the prior chapter, there are a number of private airports in and around the area that are available to support the needs of these users. As part of the continuous planning process, PAG should coordinate with and encourage privately owned

airports in the Region, such as El Tiro, to continue to operate and to serve the needs of sport and recreational users.

- **Security Issues** - ADOT is in the process of formulating security guidelines for System airports. FAA, through the Transportation Security Administration (TSA), also continues to examine and establish new security guidelines and requirements for the nation's commercial service and general aviation airports. As these security measures are still being formulated at this time (June 2002), follow-on efforts to ensure that RASP airports are in compliance with both State and Federal security guidelines will be required. Final security guidelines and standards should be incorporated as new performance measures in the next update to the PAG RASP.
- **Intermodal Planning** - Intermodal planning emphasizes the transfer of goods and people among the modes of transportation in the most cost-effective and efficient manner possible. It also stresses a wide range of transportation options; intermodal planning should be integrated with other State and regional planning activities. Consequently, the RASP has investigated intermodal opportunities related to the System. Highway and roadway improvements that would improve access to System airports, thereby supporting intermodalism, have been previously noted. As part of the continuous planning process for the RASP, coordination with intermodal facets of the regional transportation system should consider technological changes, changes in the ownership or operation of intermodal transfer facilities, changes in border area practices, and changes in national and/or regional economic conditions and practices.
- **Compatible Land Use Planning** - Many RASP airports face intense pressure from surrounding land use and development that is not compatible with the airports' operation or development. As part of the continuous planning process, follow-on studies are recommended that can provide System airports and their host and surrounding municipalities and communities with the opportunity to address compatible land use planning in the airport environs. For airports in the PAG System to continue to be a valuable and viable transportation and economic resource for Pima County, compatible land use planning is essential for all airports. As part of the continuous planning process, outreach to all communities and municipalities that neighbor the Region's airports is critical.

Davis-Monahan recently has provided Hypothetical Noise Contours for local governments to use in planning and zoning around the installation. These Hypothetical Noise Contours are an addition to their Official 1992 AICUZ (Air Installation Compatible Use Zone Report) in the form of a 2002 AICUZ Amendment. DMAFB is also working with the State of Arizona and the Office of Economic Adjustment (OEA) through the OEA's Joint Land Use Study Program to have a comprehensive land use study completed by the end of 2003 for the DMAFB Environs.

- **Regional Aviation Dialogue** - During the update of the RASP, through the Study Task Force, a dialog has been established between the System airports and representatives of PAG and ADOT. As part of their continuous planning efforts, many other regions and states have established more permanent planning and communications groups. These groups typically meet two to three times per year. These meetings provide an opportunity for airports to discuss a variety of topics and to obtain peer input on current topics. These regular and ongoing meetings also provide an

opportunity for PAG and ADOT to stay current on issues, as well as on ongoing and pending projects at System airports. These types of regular meetings help to facilitate the collection and update of various System indicators, recommended as part of the continuous planning process.

- **Air Quality** – As System airports continue to grow and develop, it is important that they take appropriate steps to mitigate and reduce potential impacts on the Region's air quality. A non-road mobile source emissions inventory for the Tucson Air Planning Area was completed by Energy and Environmental Analysis, Inc. in November 2001. This inventory quantified emissions from aircraft operations (commercial, military, and general aviation) and airport ground support equipment (GSE) such as baggage loaders. Emissions were estimated for 2000 and were projected for 2005 and 2010.

The primary air pollutants of concern in the Tucson region are ozone (O₃), carbon monoxide (CO), and particulate matter (PM₁₀). Ozone is not directly emitted, but is the result of volatile organic compounds (VOCs) and oxides of nitrogen (NO_x) reacting in the presence of sunlight. Therefore, VOC and NO_x emissions were estimated for the inventory. On the basis of this analysis, it was determined that aircraft and airport GSE emissions are approximately 1.6 percent of the total VOC emissions, 5.4 percent of NO_x emissions, 6.2 percent of CO emissions and 6.9 percent of PM₁₀ emissions. It was also determined that similar percentages for each of these pollutants can be expected in future years.

Pollutant	Aircraft Contribution	Airport GSE Contribution
VOC	1.3%	0.3%
NO _x	5.1%	0.3%
CO	4.5%	1.7%
PM ₁₀	6.6%	0.3%

PM₁₀ amounts are more likely to be caused by areas of vacant land with loose dirt that create dust and visibility problems in high wind conditions than airport operations themselves.

As airports in the PAG System continue to grow, airports should take appropriate steps to reduce and mitigate impacts on air quality. Currently, the Regional Aviation System has minimal impact on the Region's air quality ratings, and this relationship is expected to continue throughout the planning period.

- **Title VI and Environmental Justice** – The development of all transportation plans in Pima County considers the effect of the plan on minority, disabled, and low-income populations. The GIS coverage analysis conducted for the RASP determined the percentages of Pima County's minority populations that are served by, or that are in proximity to, one or more of the System airports. It is important that all segments of the population have equal access to commercial airline services and other airport services. Low-income and minority populations should not, however, be disproportionately affected by negative airport impacts related to noise and air quality. The RASP determined that the PAG Regional Aviation System provides comparable aviation service to minority and low-income populations in the Study Area. Efforts have been made throughout the

Region through individual airport planning efforts to develop airport noise abatement programs to mitigate the impacts of aircraft noise on residential areas in proximity to any System airport. These programs are administered by the individual airports in the PAG System. Air quality impacts in the Region, related to the System, are negligible and have little or no direct impact on any segment of the Region's population.

Special Studies

As part of the continuous planning process, there are three types of follow-on special studies that should be considered. Two of these follow-on studies would address compatible land use planning, which is essential to the System's long-term viability and success. The focus of the first two of these three studies is on compatible land use planning. For RASP airports to be able to fulfill their near- and long-term System roles, it is crucial that these airports be protected from the encroachment of incompatible land uses. Actions identified in this part of the continuous planning process are essential to protecting System airports from encroachment. These special studies may be described as follows:

- **Part 77** - One of the objectives for the RASP is for all System airports to have current Part 77 surfaces. To meet this objective, it is recommended that a follow-on study be conducted, for which PAG could be the sponsor. In addition to developing the Part 77 surfaces, this follow-on study should also include an effort to identify all municipalities lying within the respective Part 77 surfaces for each airport. Coordination and meetings with each of the impacted municipalities would be included as part of this follow-on study. The study would include the development of a model height zoning ordinance that would be taken to each municipality. The objective would be to have all municipalities tailor the model zoning ordinance to their particular situation, and for each to adopt a height zoning ordinance.
- **ADOT Airport Influence Area Map** - As part of Arizona State statutes, public airports in Arizona are required to develop an Airport Influence Area Map. This map is based on specific airport flight tracks, as well as on each airport's specific noise contours. In addition to mapping these areas, each public airport is required by State law to meet with each municipality falling within their airport influence area. Municipalities are required to have these Airport Influence Area Maps on file. Further, municipalities are required to take steps to notify persons purchasing real estate in these areas that the property is in a designated Airport Influence Area zone. While most System airports have taken steps to develop the maps, coordination and public disclosure steps have not been as consistent. Efforts in these areas should be combined with the recommended follow-on Part 77 study.
- **Business/Financial Plans** - Most smaller airports in the System do not have the resources to develop a stand-alone business/financial plan. As part of the continuous planning process, a follow-on study to develop comparative rates and charges, model leases, and example minimum operating/development standards could be considered. These "generic" examples could be used by all System airports to enable them to better meet RASP objectives established for the Economic Support performance measure.

Updates

As part of the continuous planning process, two types of updates are appropriate. These are updates to individual airport master plans and an update to the RASP.

For the Level I airports in the System, an objective of having an updated master plan every five years has been established. For Level II airports, master plans should be updated every seven to 10 years. Recommendations contained in the RASP must be reconfirmed within the context of an individual airport master plan before the airport can obtain an ADOT or FAA grant for development. Airport master plans may need to be updated sooner than indicated in the RASP objectives if an airport experiences significant growth or notable changes in its operational or based aircraft fleet. Updated master plans provide an opportunity for System airports to obtain many items needed for them to be more compliant with individual RASP benchmarks. Updated master plans provide an avenue for System airports to obtain the following:

- Updated INM noise contours
- Current Part 77 drawings
- Current land appraisals and evaluations
- Updated rates and charges and lease agreements
- Minimum operating and development standards
- Financial/business plans

The previous update to the PAG RASP was published in 1995, seven years prior to the release of this RASP. Depending on changes in the System and other conditions that drove the need for PAG to undertake this current update, an update to this RASP should again be undertaken in 2008, with the final documentation being available in 2009.

Intermodal and Access Recommendations

One of the goals for the Regional Aviation System is to be accessible. Other transportation projects and plans are underway in Pima County that have the potential to improve access to RASP airports. Transportation improvement projects included in the current PAG Regional Transportation Plan (RTP) that are in the vicinity of RASP airports include the following:

- Reconstruction of the I-10/I-19 traffic interchange (ADOT)
- Reconstruction of the I-19/Valencia Road traffic interchange (ADOT)
- Widening Valencia Road to a six-lane divided roadway from I-19 to 12th Avenue (Pima County)
- Widening of La Cholla Boulevard to six lanes from I-10 to Magee Road with an additional traffic interchange (Pima County)
- Development and implementation of projects identified for Puerto Nuevo
- Reconstruction of Tangerine Road from Breakers Road to Thornydale Road (Marana)
- Widening and realignment of Avra Valley Road to four lanes from I-10 to town limits on the west (Marana)
- Widening of Tangerine Road to four lanes from Oracle Road to La Canada (Oro Valley)

In addition to these airport-related access recommendations, it is important for the System to coordinate and interface with the Region's other modes of transportation. Currently, intermodal opportunities in the Region are focused on passenger connecting opportunities between auto and bus and auto/bus to air. There are limited intermodal connections for freight, and there are no rail/pipeline or rail/air connections in the Study area.

The PAG Intermodal Management System (IMS) identifies the need for improved intermodal connecting opportunities. Improved truck connections with rail and commercial airline service should be a top priority, according to the IMS. Tucson International's proximity to the Union Pacific Mainline makes this portion of the Study Area the ideal location for new truck/rail/air connecting opportunities. The RASP supports the ongoing efforts to develop Puerto Nuevo as an intermodal area. This area would serve as a multi-dimensional inland port, connecting Mexico and the U.S. to the global market place. The RASP supports the need for a sub-regional transportation study to evaluate the local transportation linkages for Puerto Nuevo. PAG's IMS identified two potential locations for a new truck/rail facility in Pima County; one of these locations a facility adjacent to Tucson International. The IMS recommends additional highway, rail, airport, and intermodal terminal capacity. Through follow-on coordination between the IMS and the RASP, the Region will benefit by being able to identify and to adapt to changing conditions.

The proposed 264-acre Century Park Research Center located off Kolb Road, north of I-10, could become an active Foreign Trade Zone with intermodal potential. The RASP supports intermodal initiatives related to the Century Park Research Center that include a rail spur off the Union Pacific line. While this intermodal connection would not improve the Region's rail/air intermodal connecting opportunities, it could provide an opportunity for the transfer of freight and container loading and unloading.

Airport-Specific Recommendations

Airport-specific recommendations are needed to enable individual airports in the System to meet established RASP objectives for Study benchmarks, facilities and services, and other systemwide actions. These airport-specific actions are those that should be considered or undertaken to allow the System to reach higher levels of performance that have been targeted by the RASP. It is important to note that, before many of these System and airport-specific recommendations could be implemented, they would need to be part of an approved airport master plan. In some instances, recommendations (prior to implementation) would also need to be subjected to a full Environmental Assessment in accordance with guidelines contained in FAA's Environmental Handbook, Order 5050.4A. Development at several System airports is also contingent upon the airport's ability to meet Pima County requirements for fire suppression equipment. Adequate fire protection must be in place to support certain types of development identified by the RASP. In some instances, fire suppression capabilities are not currently in place to allow the full build out of all System airports, particularly as it relates to additional aircraft storage facilities.

Project costs for individual airports have been estimated based on ADOT capital improvement plans and individual master plans. These actions, projects, costs, and/or follow-on activities are discussed in the following sections.

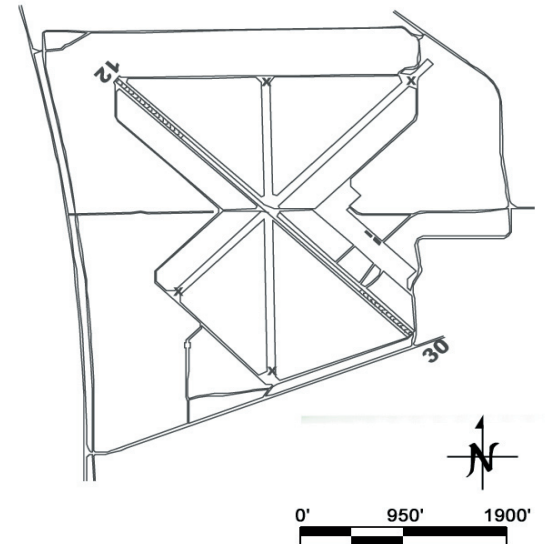
Ajo Municipal Airport

Airport Description/Background

Ajo Municipal Airport is located in western Pima County, approximately 130 miles west of Tucson and six miles north of the town of Ajo. The airport is owned and operated by Pima County and can accommodate single-engine and some multi-engine general aviation aircraft, as well as helicopters. Over 95 percent of Ajo Municipal's usage is recreational in nature. The airport can be accessed via State Highway 85, a two-lane paved highway that serves as the primary connection between Interstate 10 and Interstate 8. Well Road, Ajo Municipal's main north/south road, also provides access through its connection to Ajo Airport Approach Road.

Existing Airside Facilities

Ajo Municipal's existing runway, Runway 12/30, is 3,800 feet long, 60 feet wide, and in good condition. The runway has two taxilanes connecting to the apron, one paved and the other dirt. Although there is no published approach, Ajo Municipal's landing aids include: Precision Approach Path Indicators (PAPIs), low intensity runway lighting (LIRL), a segmented circle, a rotating beacon, and a lighted wind cone.



Existing Landside Facilities

Currently, Ajo Municipal has 18 acres of apron space available for both local and transient use. Two four-bay hangars provide enough covered storage for 100 percent of the airport's current based aircraft. Ajo Municipal's 20 auto parking spaces provide more than enough space to meet current auto parking needs. Aircraft maintenance is provided in two covered storage units. Ajo Municipal does not currently have an adequate terminal/administration building. Roughly 75 square feet of space in a hangar storage unit functions as the current administration building.

Existing Services

Ajo Municipal currently has a limited-service fixed based operator (FBO) that provides aircraft maintenance and repair. There is also full-perimeter fencing for airport security. A designated terminal/pilot lounge is not currently provided at the airport, and vending services are not offered. In addition, fuel is not provided at the airport, and there are no restroom facilities or public telephones available. Water and sewer utilities do not exist at Ajo Municipal.

AJO MUNICIPAL	
System Role:	Level II
Sponsorship:	Pima County
Federal Role:	NPIAS
Master Plan or ALP:	1999
FAR Part 77 Guidelines:	Drawing Adopted
Noise Contour:	Map Adopted
Comprehensive Plan / Vision Statement:	Acknowledged
Airport Influence Area Map:	Map Accepted

Airport Role

Ajo Municipal is a low-use general aviation airport. Both ADOT and FAA records for this facility indicate limited and consistent levels of based aircraft. The airport is publicly owned and is included in the FAA's National Plan of Integrated Airport Systems (NPIAS). The airport has a current master plan and airport layout plan (ALP), a current noise contour, and has identified its FAR Part 77 surfaces. Ajo Municipal is included in a local comprehensive plan/vision statement, and has an ADOT Airport Influence Map.

Airport Activity/Projected Demand

Based on data collected for the RASP, there are five (5) aircraft based at Ajo Municipal. Based aircraft are anticipated to reach 15 by 2030, the end of the RASP planning period. Total annual general aviation operations are expected to increase from 1,900 in 2000 to 5,925 in 2030. Current and future demand levels are not expected to reach the airport's operating capacity, 175,000 annual operations, or the RASP's critical operating capacity level (60 percent of total operating capacity) during the planning period.

AJO MUNICIPAL AIRPORT		
Activity Data	2000	2030
Based Aircraft	5	15
General Aviation Operations	1,900	5,925
Capacity Ratio (ASV: 175,000)	1.09%	3.39%

Recommended System Improvements

Ajo Municipal meets nearly all the benchmarks set by the RASP. The airport reports a covered storage waiting list of seven (7) aircraft, but meets the RASP objective of covered storage to based aircraft. Ajo Municipal has operational constraints from airspace restrictions, but these constraints are due to military activity in the surrounding area, including the Goldwater Range. The RASP accepts this overlapping airspace restriction. Ajo Municipal does not have a current business or financial plan. To meet the Financial Responsibility performance measure, Ajo Municipal should accomplish the following:

- A Business/Financial Plan should be developed.
 - \$10,000
- Continue to draft and finalize minimum operational standards.
 - \$5,000

Recommended Facility and Service Improvements

Ajo Municipal fails to meet several facility and service objectives set forth in the RASP. Although there is a limited-service FBO, there are no restrooms, telephones, running water, sewer services, or fuel. To meet facility/service objectives identified in the RASP, Ajo Municipal would need to take the following actions:

- A taxiway turnaround or parallel taxiway should be constructed.
 - Turnaround = \$60,000
 - Extending Taxiway A to Runway 12 = \$429,000 (not included in total costs)
- Runway lighting should be upgraded or taxiway lighting/reflectors should be installed.

- MIRL = \$249,600
- MITL = \$100/linear foot (design and install) = \$760,000 (not included in total costs)
- A 650-square-foot terminal/administration building should be constructed.
 - \$195/square foot = \$126,750
- By 2020, one (1) additional hangar should be constructed and three (3) hangars should be built by 2030.
 - \$42,120 (2020), \$126,360 (2030)
- 100LL fuel should be provided.
 - \$156,000
- Restroom facilities should be installed.
 - \$8,000
- A public telephone should be installed at the airport.
 - \$12,000
- Water/sewer utilities should be provided.
 - \$195,000
- Vending machines should be available.

TOTAL COSTS = \$948,710

The sum of each project recommended by the RASP totals \$948,710. This figure represents the combined costs estimated for recommended System improvements and facility and service improvements throughout the planning period but does not include all of the master plan recommendations noted in Table 9-1. These estimates were gathered from both Ajo Municipal's master plan and general cost estimates from ADOT capital improvement plans for airports throughout Arizona.

Other Airport Needs/Projects

Several projects have been identified in Ajo Municipal's most recent master plan, completed in 1999. Table 9-1 outlines RASP-relevant projects and their estimated costs. In addition to the following master plan projects, Ajo Municipal intends on opening a crosswind runway within the planning period.

No projects for Ajo Municipal are currently listed in Arizona's Five-Year Transportation Facilities Construction Program (2002-2006).

Table 9-1
MASTER PLAN PROJECTS

Facility and Service	Ultimate Objective	Meets Objective	Master Plan Projects		
Runway Length	3,500 feet	YES	Master Plan	\$292,500	Extend RW 900 feet
Runway Width	60 feet	YES	Master Plan	\$245,700	Widen RW to 75 feet
Taxiway	Turnaround	NO	Master Plan	\$429,000	Construct TW A from existing apron to RW 12
Auto Parking	Equal to 75% of based aircraft	YES	Master Plan	\$4,400	225 square yards of terminal area auto parking
Lighting	MIRL or LIRL and MITL or reflectors	NO	Master Plan	\$249,600	MIRL
Hangars Based	25% to 50% of based aircraft	YES	Master Plan	\$168,480	4,800 square feet T-hangar facility
Terminal/ Administration	650 to 800 square feet	NO	Master Plan	\$29,250	150 square feet terminal
Fuel	100LL	NO	Master Plan	\$156,000	Construct fuel storage
Aircraft Apron	50% of based; 25% of transient	YES	Master Plan	\$378,300	9,700 square yards apron expansion
Utilities	Water, sewer, electric	NO	Master Plan	\$130,000	Construct portable water supply/distribution system
		NO	Master Plan	\$65,000	Construct airport sanitary septic system
TOTAL COSTS				\$2,148,230	

For Ajo Municipal, the RASP-related costs have been estimated at \$948,710 and master plan costs have been identified at \$2,148,230. Cost estimates contained in the master plan that are duplicative of the RASP cost estimates total \$756,210. Therefore, additional costs for RASP-related projects contained in the master plan, but not identified as RASP objectives for Ajo Municipal, total \$1,392,020. When additional master plan costs are summed with the RASP cost estimates, total costs for Ajo Municipal to enable it to meet all Study benchmarks and facility and service objectives are \$2,340,730.

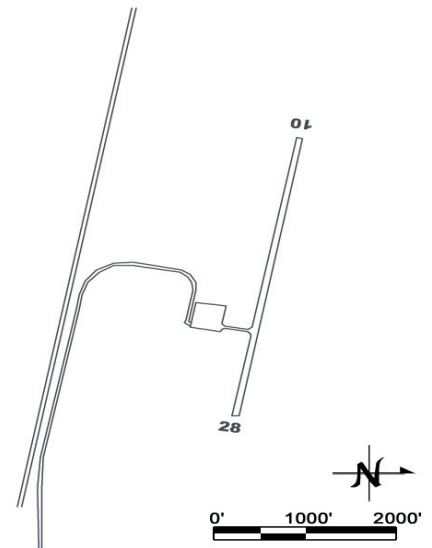
Benson Municipal Airport

Airport Description/Background

Benson Municipal Airport is located three miles northwest of the City of Benson in Cochise County, east of Pima County. The airport is 45 miles southeast of the City of Tucson, and is owned and operated by the City of Benson. Benson Municipal is the newest airport to the System, opening December 1, 1999. The airport serves helicopters, single-engine aircraft, and small multi-engine general aviation aircraft. Benson Municipal can be accessed via Interstate 10, Exit 304, then drive one (1) mile north on Ocotillo Avenue, then west on Aviation Drive.

Existing Airside Facilities

Benson Municipal's existing Runway 10/28, is 4,000 feet long by 75 feet wide. There is currently no taxiway or aircraft turnaround at the facility. One taxilane connects Runway 10/28 to the apron. The airport does not have a precision approach, but Benson Municipal's landing aids include: PAPIs, runway end identifier lighting (REILs), medium intensity runway lighting (MIRL), a segmented circle, a rotating beacon, a lighted wind cone, and Unicom. Since the RASP inventory was documented, the airport purchased weather-reporting instrumentation that shows wind speed, wind gust, chill factor, and temperature; they will be adding the altimeter component in the future.



Existing Landside Facilities

Benson Municipal currently has no operations/maintenance hangar or aircraft storage located on airport property. Since the inventory was documented, the airport acquired a limited-service FBO that provides a 240-square-foot pilot lounge/administration building. This building does not satisfy the 650-square-foot administration building objective, but provides temporary support; Benson Municipal has identified the need for, and is in the planning process to, build a stand-alone terminal administration building that will meet RASP objectives. The airport's apron is 14,000 square yards; this ramp should be large enough to satisfy projected demand through the intermediate planning period (2010-2020). Because of recent growth, the City of Benson feels it may be necessary to expand this ramp in the short term (2000-2010). There are also 10 paved auto parking spaces located at the airport, providing sufficient auto parking for Benson Municipal's current demand, but not for its short-term (2000-2010) forecasted demand.

Existing Services

In its early developmental stages, Benson Municipal already offers several amenities the RASP identifies as service objectives. Since the RASP analysis was documented, Benson Municipal has met several of the service objectives examined in previous chapters. There is now a limited-service FBO with a full-time employee at the airport; this FBO provides 100LL fuel, restrooms, and vending machines. Electricity,

sewage utilities, rental car, and a free public telephone are also present. A Cessna 172 is available on-site for rental and/or training. Benson Municipal is in the process of installing a fire protection system with a \$450,000 ADOT grant. Two wells have been drilled, the majority of the pipes are in the ground, and fireplugs are in place, each with 150,000-gallon tanks built. Perimeter fencing provides security for airport property. These service improvements satisfy objectives previously identified in Chapters Seven and Eight as deficiencies in the Study. Currently the airport does not have a maintenance hangar.

Airport Role

Benson Municipal is currently a low-use general aviation airport; but in the future its owners/operators envision this airport taking a more significant role in the System. The airport is publicly owned and receives money from the City of Benson. Benson Municipal is included in the FAA's NPIAS; it has a current master plan, has identified its Part 77 surfaces, is included in a local comprehensive plan/vision statement, and has an ADOT Airport Influence Area Map.

BENSON MUNICIPAL	
System Role:	Level II
Sponsorship:	Town of Benson
Federal Role:	NPIAS
Master Plan or ALP:	1997
FAR Part 77 Guidelines:	Drawing Adopted
Noise Contour:	Map Adopted
Comprehensive Plan / Vision Statement:	Acknowledged
Airport Influence Area Map:	Map Accepted

Airport Activity/Projected Demand

The RASP reports five (5) based aircraft at Benson Municipal. Aggressive growth at this airport is expected throughout the planning period. By 2030, 65 aircraft are projected to be based at Benson Municipal. Total annual general aviation operations are forecast to grow from 1,500 in 2000 to 25,675 in 2030. Total operations are not expected to reach 60 percent of the airport's annual service volume of 175,000 total operations by 2030.

BENSON MUNICIPAL AIRPORT		
Activity Data	2000	2030
Based Aircraft	5	15
General Aviation Operations	1,900	5,925
Capacity Ratio (ASV: 175,000)	1.09%	3.39%

Recommended System Improvements

In order to meet each of the RASP benchmarks, Benson Municipal should undertake several projects. RASP economic support benchmarks suggest that the System should have a Part 135 operator; Benson Municipal is actively recruiting a Part 135 operator to run a charter service from the airport to satisfy this System benchmark. In order to fully comply with the Economic Support performance measure, Benson Municipal should accomplish the following:

- Continue to pursue and attract a Part 135 operator.

Since the RASP analysis, Benson has acquired full-time, on-site staff, satisfying a Financial Responsibility performance objective not recognized in earlier RASP documentation. To uphold its financial responsibility to the System, Benson Municipal should also complete each of the following:

- A business/financial plan should be developed.
 - \$10,000

- Operating/minimum standards should be developed.
 - \$5,000

Recommended Facility and Service Improvements

Since the data collection and analysis for the RASP took place, Benson Municipal has met several of the service objectives identified as deficiencies earlier in the Study. The airport has acquired a limited-service FBO that provides 100LL fuel, restrooms, and vending machines. To satisfy the RASP's facility and service objectives, Benson Municipal should undertake the following improvements:

- The airport should construct a turnaround and continue to plan for the development of a parallel taxiway in the long term.
 - Turnaround = \$60,000
 - Parallel taxiway = \$1,000,000 (not included in total costs)
- Covered storage should be erected for three (3) aircraft to meet current needs. The airport should also provide enclosed/covered storage for eight (8) additional aircraft by 2005, according to forecast based aircraft numbers; 13 additional covered storage spaces by 2010; 23 by 2020; and 33 by 2030.
 - \$15,000/T-hangar = \$45,000 (2000), \$120,000 (2005), \$195,000 (2010), \$345,000 (2020), \$495,000 (2030)
- One (1) parking space should be added by 2005 to meet forecasted auto parking needs; nine (9) additional spaces by 2010; 24 by 2020; 39 by 2030.
 - One (1) space = \$180 (2005), \$1,620 (2010), \$4,320 (2020), \$7,020 (2030)
- The apron should be enlarged 525 square yards by 2030.
 - \$5,250
- A 650-square-foot terminal/administration building should be constructed.
 - \$122/square foot = \$79,300
- The airport should carry through with plans expand its FBO services.

TOTAL COSTS = \$661,570

The sum of each project recommended by the RASP totals \$661,570. This figure represents the combined costs estimated for recommended System improvements and facility and service improvements throughout the planning period, but does not include all of the master plan recommendations noted in **Table 9-2**. These estimates were gathered from both Benson Municipal's master plan and generic cost estimates from ADOT capital improvement plans for airports throughout Arizona.

Other Airport Needs/Projects

The airport has recognized the significance of several airport improvements in its master plan and in its request for funding from the Arizona Department of Transportation. Several projects for the airport are included in ADOT's statewide CIP and in Benson Municipal's master plan. The City of Benson also feels Jet A fuel is necessary to accommodate helicopter traffic. The following table, Table 9-2, outlines RASP-related projects and their estimated costs based on ADOT and master plan figures.

Table 9-2
CIP/MASTER PLAN PROJECTS

Facility and Service	Ultimate Objective	Meets Objective	CIP/Master Plan Projects		
Runway Length	3,500 feet	YES	CIP	\$150,000	Design RW extension
			CIP	\$750,000	7,000 x 100 ft. RW extension
Runway Width	60 feet	YES	Master Plan	\$290,000	Widen RW 19,444 square yards
Taxiway	Turnaround	NO	CIP	\$150,000	Parallel TW design in 2002
			CIP	\$850,000	Parallel TW construction in 2003
Auto Parking	75% of based aircraft	YES	Master Plan	\$27,000	1,800 square yards expansion
Aircraft Apron	50% of based; 25% of transient	NO	Master Plan	\$150,000	15,000 square yards expansion
Hangars Based	25% to 50% of based aircraft	NO	Master Plan	\$150,000	10 T-hangar units
Terminal/ Administration	650 to 800 square feet	NO	Master Plan	\$165,000	1,350-square-foot terminal bldg.
Operations/ Maintenance Hangar	Not an objective	NA	Master Plan	\$500,000	Construct FBO building
Jet A Fuel	Not an objective	NA	Master Plan	\$100,000	Construct fuel storage
TOTAL COSTS				\$3,282,000	

For Benson Municipal, the RASP-related costs have been estimated at \$661,570 and CIP/master plan costs total \$3,282,000. Several of the CIP/master plan costs duplicate those identified as RASP projects. Cost estimates contained in the CIP/master plan that are duplicative of the RASP cost estimates total \$241,570. Therefore, additional costs for RASP-related projects contained in the CIP/master plan, but not identified as RASP objectives for Benson Municipal, total \$3,040,430. When additional master plan costs are summed with the RASP costs estimates, total costs for Benson Municipal to enable it to meet all Study benchmarks and facility and service objectives are \$3,702,000.

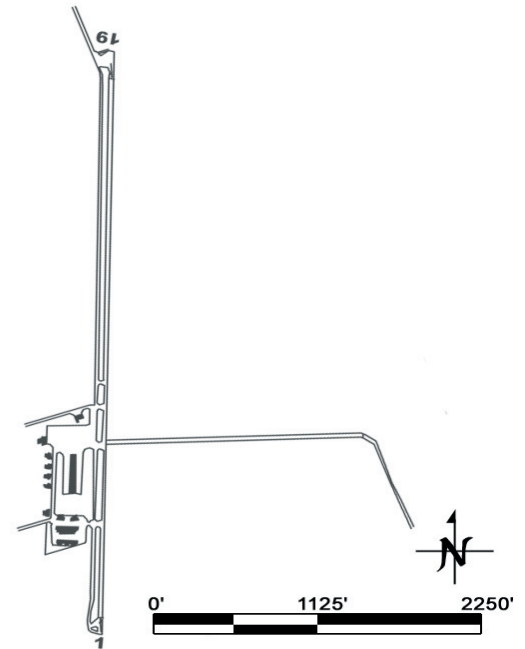
La Cholla Airpark

Airport Description/Background

La Cholla Airpark is owned and operated by a private residential community. The airpark supports primarily small multi-engine and single-engine general aviation aircraft. The airpark is located near the Town of Oro Valley in north-central Pima County; Oro Valley is 15 miles north of Tucson's central business district. Access to La Cholla Airpark is provided via La Cholla Boulevard and Tangerine Road. The actual airfield is located inside a housing complex where roadways serve as taxiways for aircraft owners to transport their plane(s) from their private property to the runway. The airport is used for recreational and business purposes by airpark members.

Existing Airside Facilities

La Cholla Airpark is a single-runway facility serving the needs of its association members. Runway 1/19 is 4,500 feet long by 45 feet wide; in 2002, the runway was resurfaced and the width was increased from 36 feet to 45 feet. La Cholla Airpark's landing aids include: low intensity runway lighting (LIRL), a wind cone, tetrahedron, and a segmented circle.



Existing Landside Facilities

On La Cholla Airpark, there are 25 T-hangars, eight (8) shade ports, and 29 paved tiedown spaces. Throughout the airpark, there are numerous conventional hangars located on homeowners' property; these hangars are not reflected in the RASP's documentation. Auto parking at La Cholla Airpark, similar to hangar space, is not limited to spaces in the "public" portions of the airpark. There are 10 auto parking spaces on airport property; however, most users keep their automobiles in personal garage space and taxi their planes from their homes to the runway. Because of its unique mode of operation, RASP requirements related to hangar storage and automobile parking and at La Cholla Airpark are not applicable to this facility. In the past, a maintenance hangar was used by a mechanic to work on aircraft, but the maintenance hangar is not currently in use. A terminal/administration building exists on the north side of the airfield, but is smaller than the RASP objective of 650 square feet. Due to the residential nature of the airpark, however, a larger terminal/administration building is not considered necessary.

Existing Services

The airpark has one belowground fuel tank, storing a total capacity of 10,000 gallons of 100LL fuel. Although this fuel is only for sale to its members, the public may access fuel in case of an emergency. La Cholla Airpark provides telephone and restroom services in its terminal building. Water, sewer, and electricity also exist at La Cholla Airpark. A limited-service FBO no longer works at La Cholla Airpark, there is no security fencing around the airport property, and vending machines do not exist at the airport.

Airport Role

La Cholla Airpark's role in the System is unique as it is privately owned and operates on a PPR (Prior Permission Required) basis for residents, members, and their guests. The number of based aircraft and total annual general aviation operations at La Cholla Airpark make it significant to the System. The airpark is not included in the NPIAS, and, therefore, is ineligible for Federal funding. The airpark has identified its Part 77 surfaces and has an ADOT Airport Influence Area Map. Homeowners in surrounding areas are aware of the airpark's existence before purchasing their property.

LA CHOLLA AIRPARK	
System Role:	Level II
Sponsorship:	Private
Federal Role:	Non-NPIAS
Master Plan or ALP:	No Plan
FAR Part 77 Guidelines:	Drawing Adopted
Noise Contour:	No Ordinance
Comprehensive Plan / Vision Statement:	Not Acknowledged
Airport Influence Area Map:	Map Accepted

This awareness is due to real estate disclosure.

La Cholla Airpark is not included in a local comprehensive plan/visions statement. The County should work with the Airpark to implement an aviation overlay zone in the area surrounding the airpark. The airpark does not have a master plan or a current noise contour. Actions to protect this aviation resource from incompatible encroachment are considered important by the RASP.

Airport Activity/Projected Demand

La Cholla Airpark currently has 92 aircraft based throughout the airpark, and the airpark is forecasted to base 140 aircraft by 2030. Total annual operations, consisting of only general aviation operations, were reported at 4,000 in 2000. By 2030, total general aviation operations could reach 16,800. This future level of annual operational demand is based on the assumption that the Airpark will serve a higher number of future based aircraft and that these aircraft will be flown at a higher rate of utilization. The 2030 forecast of annual operations assumes approximately 23 takeoffs each day for the airport. As a result, the airpark is not expected to reach 60 percent of its total annual operational capacity by the end of the planning period. Due to a variety of constraints, the airpark has limited growth potential.

LA CHOLLA AIRPARK		
Activity Data	2000	2030
Based Aircraft	92	140
General Aviation Operations	4,000	16,800
Capacity Ratio (ASV: 204,000)	1.96%	8.24%

Recommended System Improvements

La Cholla Airpark has a unique role in the System as a private airport. Because of its arrangement as a residential airpark, La Cholla Airpark has not been held to the same auto parking and covered aircraft storage objectives as other Level II System airports. Much of this facility's parking and aircraft storage is on personal property. At the airpark, planes are taxied to the runway on neighborhood roads, thus making it less important to have designated auto parking spaces on the airfield.

La Cholla Airpark is not "required" to meet runway/taxiway separation standards or RSA guidelines

identified in the Standards performance measure because the airport is not recognized in the NPIAS. Ideally, however, all System airports should strive to meet these standards. La Cholla Airpark has approach impacts from obstructions caused by a mountain on the north/northwest side of the runway; the RASP has recognized that the approach to this airport will continue to be compromised because the controlling obstruction is natural (terrain), rather than manmade in nature.

La Cholla Airpark has identified its Part 77 surfaces and has developed an ADOT Airport Influence Area Map. As a privately owned airport, La Cholla Airpark is not targeted to complete a master plan/ALP, but in order to meet other Compatibility benchmarks, the airpark should accomplish the following:

- The airport should be included/recognized in a local comprehensive plan.
 - \$2,000
- The airport should have a current noise contour.
 - \$5,000

For all other performance measures, Economic Support, Financial Responsibility, and Accessibility, La Cholla Airpark meets the applicable benchmarks.

Recommended Facility and Service Improvements

Although La Cholla Airpark is a private facility not in the NPIAS, it is held to most of the other same facility and service guidelines as other Level II airports in the System. La Cholla Airpark should take the necessary steps to satisfy facility and service objectives adopted by the RASP. To meet all facility and service objectives identified in the RASP, La Cholla Airpark would need to take the following actions:

- The airport should increase its runway width to 60 feet.
 - \$250,000
- Runway lighting should be upgraded or taxiway lighting/reflectors should be installed.
 - MIRL = \$44.00/linear foot = \$396,400
 - MITL = \$100/linear foot (design and install) = \$900,000 (not included in total costs)
- A rotating beacon should be installed.
 - 50,000
- A limited-service FBO should operate at the airport.
- The airports should improve security by installing perimeter fencing.
 - \$100,000
- Vending services should be provided.

TOTAL COSTS = \$803,400

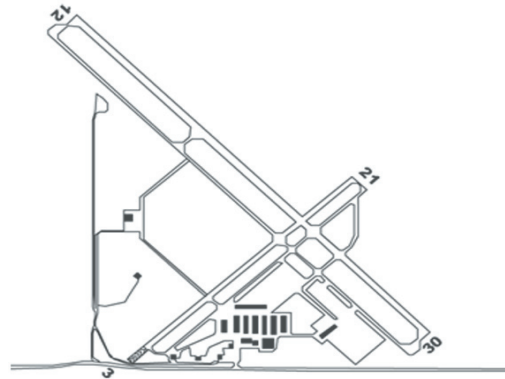
Other Airport Needs/Projects

The airpark community funds 100 percent of the projects undertaken at La Cholla Airpark. The airpark does not have a master plan, and it does not have any projects identified in the ADOT capital improvement plan. Because this airpark does not have a master plan or qualify for Federal or State funding other than the RASP-related projects, there are no other outstanding capital projects identified for this airport. In order to meet each of the Study benchmarks and applicable facility and service objectives identified in the RASP, the total costs equal \$803,400.

Marana Northwest Regional

Airport Description/Background

Marana Northwest Regional Airport is located in north-central Pima County, approximately 18 miles northwest of Tucson's central business district. Formerly Avra Valley Airport, the airport is now owned and operated by the Town of Marana. This airport can support a full range of general aviation aircraft, including corporate/business jets. Marana Northwest Regional can be accessed via Avra Valley Road from Interstate 10. The airport can also be accessed from the western portions of Tucson via Sandario Road, intersecting Avra Valley Road one-tenth of a mile east of the airport entrance.



Existing Airside Facilities

Marana Northwest Regional is a dual runway facility; the primary runway, Runway 12/30, is 6,901 feet long by 100 feet wide. The crosswind runway, Runway 3/21, is 4,201 feet long by 75 feet wide. The airport plans to initially extend its crosswind runway by 500 feet, with a subsequent 700-foot additional extension. Parallel taxiways serve both runways. There is currently not a published approach to either runway, but Marana Northwest Regional's landing aids include: medium intensity runway lighting (MIRL), medium intensity taxiway lighting (MITL), PAPIs, VASIs, REILs, a rotating beacon, lighted wind cone, and a segmented circle. The facility also provides AWOS weather reporting.

Existing Landside Facilities

There are currently 156 existing covered storage spaces at Marana Northwest Regional, eight (8) units short of their current need and 20 units short of the airport's 2005 needs, according to the RASP. Auto parking at Marana Northwest Regional is also deficient at this time; there are currently 90 auto parking spaces, 128 spaces short of the airport's current need and 145 spaces short of the forecast requirement in 2005. Although the airport does not currently meet these two objectives, both issues have been addressed in their master plan. Marana Northwest Regional meets the landside facility objectives for adequate apron size, with 27,900 square yards of apron. The airport meets RASP-established objectives for its terminal/administration building and its operations/maintenance hangar.

Existing Services

The airport satisfies each of the service objectives set forth in the RASP. Marana Northwest Regional currently has a full-service FBO, providing maintenance and fuel services. There is a full-service maintenance hangar providing the following: aircraft sales, aircraft rental, aircraft repair, avionics repair, and avionics sales. Flight instruction, on-site rental car services, a public telephone, restrooms, and a pilot's lounge are all located on the airfield; there is also a full-service restaurant at the airport. Marana Northwest Regional has one 20,000-gallon AvGas storage tank and two 12,500-gallon Jet A tanks; both types of fuel are distributed via fuel trucks. The airport is currently installing six-foot chain linked fencing

with three-strand barbed wire along the top to provide perimeter fencing; parking will be restricted and there will be card-reading gates by September 2002. A night guard and terminal/hangar security lighting secure the airport as well. The airport is in the process of contracting a second FBO to be on-site, and the airport has a current RFP (request for proposal) for the construction of 50 hangars. Development at this airport has been hindered because portions of the airport's developable property lack required fire suppression equipment.

Airport Role

As a Level I airport, Marana Northwest Regional serves a major role in the System as a high-volume airport. Although the airport's individual long-term forecast is more aggressive than that of the RASP, this Study recognizes Marana Northwest Regional's potential to experience demand versus capacity constraints by the conclusion of the planning period (2030). Historically, growth at the airport may have been limited by the vision for the airport. The airport is now seen as being a major job center for this portion of the County and growth to match this vision is anticipated. The airport is publicly owned and is included in the NPIAS. A master plan and ALP update was completed in 1999; the airport has adopted FAR Part 77 guidelines; there is an existing noise contour map; an Airport Influence Area Map; and the airport is included in the local comprehensive plan/vision statement.

MARANA NORTHWEST REGIONAL	
System Role:	Level I
Sponsorship:	Town of Marana
Federal Role:	NPIAS
Master Plan or ALP:	1999
FAR Part 77 Guidelines:	Drawing Adopted
Noise Contour:	Map Adopted
Comprehensive Plan / Vision Statement:	Acknowledged
Airport Influence Area Map:	Map Accepted

Airport Activity/Projected Demand

Information provided by Marana Northwest Regional at the onset of the RASP indicated there were 218 based aircraft on the airfield. By 2030, this figure is projected to be 340, while operations are expected to grow from 71,300 (2000) to 134,300 (2030).

MARANA NORTHWEST REGIONAL		
Activity Data	2000	2030
Based Aircraft	218	340
General Aviation Operations	71,300	134,300
Capacity Ratio (ASV: 230,000)	31.00%	58.39%

According to the RASP forecast, the airport may approach 60 percent of its annual service volume of 230,000 total operations by 2030. According to the airport's individual forecast, they may reach this critical demand versus capacity trigger point earlier in the planning period. The airport may experience operational delays during the planning period. Since the RASP inventory was completed in July 2001, Marana Northwest Regional has increased its based aircraft by 10 planes and its hangar waiting list has grown from 160 to 279 planes. With the possible introduction of a second FBO and the potential for a new fleet of corporate jets operating at the airport in the short term, based aircraft and annual activity levels at this airport should be monitored to determine the need for accelerated development of aircraft storage, auto parking, and additional airfield facilities.

Recommended System Improvements

Marana Northwest Regional meets most of the RASP performance measure benchmarks. Although the airport does not offer air cargo service at this time, the airport has expressed interest in obtaining this

service in the future. For this Study, Marana Northwest Regional is considered to be in compliance with System objectives related to air cargo service. There is currently a displaced threshold on Runway End 03 due to the proximity of this runway end to Avra Valley Road. The proximity of Runway End 30 to Avra Valley Road has an adverse impact on the airport's approach. In order to fully comply with the Standards performance measure, Marana Northwest Regional should accomplish the following:

- Extend Runway End 21 to remove the displaced threshold from Runway End 03.
 - \$900,000
- Avra Valley Road should be realigned so it does not obstruct the approach to Runway End 30.
 - \$43,800,000 (Source: 2001-2025 RTP)

To comply with the Financial Responsibility performance measure, Marana Northwest Regional should also complete the following:

- A Business/Financial Plan should be developed.
 - \$30,000
- Minimum development and operating standards should be established.
 - \$5,000

As per recent input from this airport, minimum operating standards have been developed and are now in draft form. Level I airports should discourage special-use aviation for the safety and efficiency of airport operations. Although discouraged, special-use aviation continues to exist at Marana Northwest Regional. Currently, the airport does not have a published approach, but is in the process of establishing an approach. When this approach is available, Marana Northwest Regional will be compliant with the RASP objective calling for all Level I airports to have a published approach. The only System airport that can currently be reached by using public transportation is Tucson International Airport. It is an objective of the RASP to increase the percentage of the Region's population and employment within a 30-minute drive time of a System airport that is accessible through public transportation. It is also important that far-reaching and aggressive steps be taken to promote compatible land use in the areas surrounding this key System facility. In order to achieve these accessibility objectives, the following is recommended:

- Special-use aviation should be discouraged at Marana Northwest Regional.
- A published approach should be provided.
 - \$500,000
- Public transportation to Marana Northwest Regional should be provided.

Recommended Facility and Service Improvements

Marana Northwest Regional meets nearly all facility and service objectives established in the RASP for Level I airports. Although Marana Northwest Regional's master plan proposes a 40-hangar construction project, the airport planning committee has passed a 50-hangar space construction project to be slated for completion within the next two years. Construction of a 250,000-gallon fire suppression system project is now in the process of being completed. To enable the System to achieve its goal of 100 percent compliance with facility and service objectives, Marana Northwest Regional should consider the following:

- Hangar storage should be built to provide cover for 8 additional aircraft to meet 2000 objectives; and in 2005, 20 additional covered storage spaces should be built, according to the based aircraft forecast. By 2010, 33 additional hangars should be provided; and 62 additional storage units should be provided by 2020. By 2030, 99 additional hangars should be provided to meet RASP-based demand projections.
 - \$42,125/T-hangar = \$337,000 (2000), \$842,500 (2005), \$1,390,125 (2010), \$2,611,750 (2020), \$1,170,345 (2030)
- According to the RASP's auto parking objectives, 128 spaces should be added to meet 2000 demand levels; 145 additional auto parking spaces should be added by 2005. By 2010, 162 additional auto parking spaces should be provided, 200 additional spaces by 2020, and 250 additional auto parking spaces by 2030.
 - \$384/auto parking space = \$49,152 (2000), \$55,680 (2005), \$62,208 (2010), \$76,800 (2020), \$96,000 (2030)
- The apron should be enlarged to support increasing based and transient demand throughout the planning period. By 2005, apron size should be increased to 29,660 square yards, 31,850 square yards in 2010, 36,575 square yards by 2020, and 42,700 square yards by 2030.
 - \$68,640 (2005), \$154,050 (2010), \$338,325 (2020), \$577,200 (2030)
- Continue to improve airport security measures by completing the current perimeter fencing project and controlled access gates.

PROJECT COSTS = \$6,278,575

AVRA VALLEY ROAD REALIGNMENT = \$43,800,000

TOTAL COSTS = \$50,078,575

Other Airport Needs/Projects

The RASP recognizes that projects needed to address benchmarks and performance measures have been identified for Marana Northwest Regional in previous studies. Projects contained in ADOT's most recent statewide CIP, the 2001-2025 RTP, and the airport's master plan, as they relate to the RASP, are included in **Table 9-3**.

Table 9-3
CIP/RTP/MASTER PLAN PROJECTS

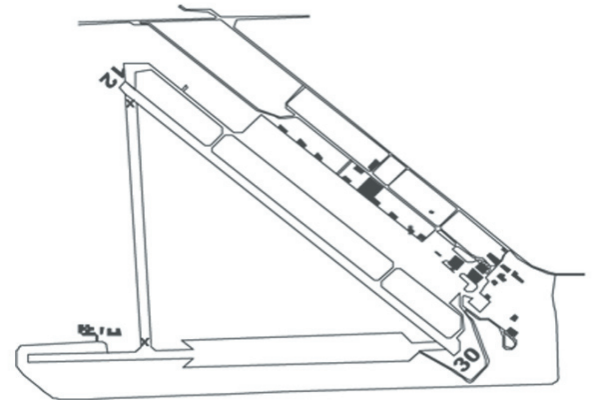
Facility and Service	Ultimate Objective	Meets Objective	CIP/RTP/Master Plan Projects		
<i>Taxiway</i>	<i>Full parallel</i>	YES	<i>CIP</i>	\$462,000	<i>Construction 14,200 square yards</i>
<i>Capacity</i>	<i>Under 60% capacity in 2030</i>	YES	<i>Master Plan</i>	\$1,037,400	<i>High speed exits on Taxiways A3, A6, & E2</i>
				\$1,820,000	<i>Construct Runway 12R/30L</i>
				\$910,000	<i>Construct parallel Taxiway D</i>
<i>Approach</i>	<i>Precision or non-precision</i>	NO	<i>Master Plan</i>	\$0	<i>Establish GPS Approach in 2002</i>
<i>Lighting</i>	<i>HIRL or MIRL with MITL</i>	YES	<i>CIP</i>	\$669,701	<i>MITL/HITL on TW B in 2002</i>
<i>Auto Parking</i>	<i>Equal to 100% of based aircraft</i>	NO	<i>Master Plan</i>	\$68,250	<i>3,500 square yards Auto Parking in 2002</i>
<i>Apron</i>	<i>Equal to 25% based aircraft and 50% transient aircraft</i>	YES	<i>Master Plan</i>	\$4,641,500	<i>Construct Phase I of aircraft parking ramp</i>
<i>Operations/ Maintenance Hangar</i>	<i>10,000 square feet</i>	YES	<i>Master Plan</i>	\$110,000	<i>3,500 square feet main-tenance building</i>
<i>Hangar Storage</i>	<i>Equal to 75% of based aircraft</i>	NO	<i>Master Plan</i>	\$1,685,000	<i>Construct 40 T-hangar positions</i>
<i>Standards</i>	<i>No manmade obstructions</i>	NO	<i>CIP</i>	\$900,000	<i>Extend RW End 21</i>
SUBTOTAL COSTS				\$12,303,851	
<i>Standards</i>	<i>No manmade obstructions</i>	NO	<i>RTP</i>	\$43,800,000	<i>Avra Valley Road realignment</i>
TOTAL COSTS				\$56,103,851	

For Marana Northwest Regional, the RASP-related costs have been estimated at \$50,078,575 and CIP/RTP/master plan costs total \$56,103,851, including the cost of realigning Avra Valley Road. Several of the CIP/RTP/master plan costs duplicate those identified as RASP projects. Cost estimates contained in the CIP/RTP/master plan that are duplicative of the RASP cost estimates total \$46,861,950. Therefore, additional costs for RASP-related projects contained in the CIP/RTP/master plan, but not identified as RASP objectives for Marana Northwest Regional, total \$9,241,901. When additional master plan costs are summed with the RASP costs estimates, total costs for Marana Northwest Regional to enable it to meet all Study benchmarks and facility and service objectives are \$59,320,476. Without including the realignment of Avra Valley Road, the sum of RASP cost estimates and additional CIP/master plan project costs are \$15,520,476.

Pinal Airpark

Airport Description/Background

Pinal Airpark is located within the Evergreen Air Center, just north of the Pima/Pinal county line, in Pinal County. The airpark is owned by Pinal County and is currently operated by Evergreen Air Center. The County is, however, in the process of taking a more proactive role in the development and daily operation of this airpark. Commercial aircraft are serviced, stored, and/or restored at Pinal Airpark. The airpark is capable of handling small recreational aircraft to large commercial aircraft. Pinal Airpark is located three miles west of Interstate 10. The only access is from the Pinal Airpark Road exit off I-10. Once through the security gate, Del Smith Boulevard provides access to the Army National Guard facility, whereas Evergreen Way provides access to the flight line.



As Pinal County becomes more involved in the management and daily operations of the airpark, the facility will be open for less restrictive public use. Pinal Airpark, in conjunction with Pinal County, will

work closely with San Manuel Airport to improve aviation in Pinal County. San Manuel Airport was recognized by ADOT as “Airport of the Year” in 2001 and intends on becoming a more active airport in the Arizona Aviation System. The need to consider San Manuel as part of the PAG RASP will be determined prior to the next update of this Plan. Currently, San Manuel’s top three concerns are hangar space, utilities, and ownership of land verses leasing options. BHP Copper currently owns San Manuel Airport. A master plan is currently underway for this airport; a request for proposal has been issued for public/private hangar partnerships. San Manuel Airport currently has a slurry station for the Forest Service and has regular Army National Guard training. Although San Manuel Airport is not currently listed in the NPIAS, NPIAS inclusion has been noted as a short-term objective for this facility.

Existing Airside Facilities

Pinal Airpark’s existing runway, Runway 12/30, is 6,850 feet long by 150 feet wide. A parallel taxiway and a series of taxilanes provide access to hangars and tiedowns. In the early 1990s, Pinal Airpark had a published approach. However, at this time, there is no record of a precision or non-precision approach to this airport, according to current FAA documentation. Although the airport has MIRL and taxiway reflectors, Level I airside facility lighting objectives are to have HIRL or MIRL with MITLs. This airport also lacks REILs, VGSI (PAPI/VASIs), and an existing weather-reporting system; all of these items are objectives for PAG Level I airports. In compliance with Level I airside facility objectives, Pinal Airpark provides the following landing aids: a rotating beacon, a lighted wind cone, and a segmented circle.

Existing Landside Facilities

Pinal Airpark reports 235,000 square yards of apron space on their ALP dated in 1991. Evergreen Air Center is an aircraft maintenance facility with three large conventional maintenance hangars, combining for a total of 101,056 square feet. The airport's 100-space parking lot provides adequate room for the current level of based aircraft at this airport. The Evergreen Air Center is a large building with administration space that satisfies the Level I landside facility objective. Currently, based aircraft are stored using tiedowns, and maintenance activities are carried out in each of the hangars. Pinal Airpark does not currently have adequate hangar space for its number of based aircraft, according to RASP objectives for covered aircraft storage.

Existing Services

Pinal Airpark is a secure facility with a 24-hour guard at the airpark entrance and perimeter fencing around the airport. The Evergreen Air Center is the airpark's full-service FBO in charge of fueling, aircraft repair, avionics repair, and avionics sales. Pinal Airpark has the capacity to store 30,000 gallons of AvGas, 150,000 gallons of Jet A fuel, and 30,000 gallons of MoGas. Although the airpark can arrange for Enterprise Rent-A-Car to provide rental car service, there is not a rental car facility on-site. Thus, this airport technically does not meet the RASP service objective for an on-site rental car facility.

Airport Role

Pinal Airpark is a Level I airport that does not currently serve the amount of general aviation traffic that other Level I airports have a history of supporting. Pinal Airpark is included in the NPIAS and is owned by Pinal County. A master plan and ALP were completed in 1991, but have not been updated since. FAR Part 77 surfaces have been identified, and a current ADOT Airport Influence Area Map and noise contour are available. The airpark is not currently included in a local comprehensive plan/vision statement.

Airport Activity/Projected Demand

Pinal Airpark's general aviation activity is not forecasted to change dramatically throughout the planning period. This could change, however, as the airpark becomes less restrictive with Pinal County taking a more active role in airport operations and management. There are currently 58 based aircraft at Pinal Airpark; this number could remain constant through 2030. General aviation operations are expected to decline from 18,815 (2000) to 18,800 in 2005, and to remain at this level throughout the planning period. The airpark should not reach a critical operational capacity between 2000 and 2030. Forecasts of annual activity contained in this RASP could increase as operations at this

PINAL AIRPARK	
System Role:	Level I
Sponsorship:	Pinal County
Federal Role:	NPIAS
Master Plan or ALP:	1991
FAR Part 77 Guidelines:	Drawing Adopted
Noise Contour:	Map Adopted
Comprehensive Plan / Vision Statement:	Not Acknowledged
Airport Influence Area Map:	Map Accepted

PINAL AIRPARK		
Activity Data	2000	2030
Based Aircraft	58	58
General Aviation Operations	18,815	18,800
Capacity Ratio (ASV: 175,000)	9.65%	9.65%

facility become less restrictive in ensuing years. The RASP's continuous planning process should monitor demand levels at this airport.

Recommended System Improvements

Pinal Airpark meets most RASP benchmarks at this time. The airpark has an acceptable runway/taxiway separation, meets RSA guidelines, and does not have operational constraints from airspace or approach impacts from obstructions. The pavement condition has not been measured by ADOT at this airport, but according to Pinal County staff and ADOT personnel, the PCI for the primary runway at this airport is considered to be below the RASP PCI objective. In order to meet RASP standards benchmarks, Pinal Airpark should do the following:

- Pavement condition should be improved to meet a PCI rating of 80.
 - \$7.50/square yard = \$2,568,750

The airpark is deficient in two benchmarks related to reaching the Compatibility performance measure. Although the airport has identified its FAR Part 77 surfaces, has a current noise contour map, and has an ADOT Airport Influence Area Map, Pinal Airpark lacks a current master plan/ALP and is not included in a local comprehensive plan/vision statement. In order to comply with each of the Compatibility performance measure benchmarks, Pinal Airpark should take the following actions:

- The airport should be included/recognized in a local comprehensive plan.
 - \$2,000
- An ALP and/or Master Plan should be updated/developed.
 - \$150,000

Pinal Airpark does not meet several benchmarks the RASP considers important to achieving financial responsibility. The airport has full-time, on-site staff, but does not have a business/financial plan, does not have local financial support, has not updated current rates and charges, has not had a recent land appraisal, and does not currently have operating/minimum standards. In order to more fully comply with the Financial Responsibility performance measure, Pinal Airpark should accomplish the following:

- A Business/Financial Plan should be developed.
 - \$30,000
- The airport should receive money from a local public sponsor for capital projects.
- Rates and charges should be updated.
 - \$5,000
- Airport property should be appraised for its current value.
 - \$5,000
- Minimum standards should be established.
 - \$5,000

Recommended Facility and Service Improvements

Pinal Airpark does not meet several Level I facility and service objectives established in the RASP. As a Level I airport, Pinal Airpark should have a published approach. In the early 1990s there was record of such an approach, but one does not exist now. Several objectives are not met with respect to lighting and visual approach aids as well. In addition, the airport does not have an on-site weather-reporting system, covered storage units for based aircraft, a terminal/pilot lounge, or an on-site rental car facility. To meet each of the RASP facility and service objectives, Pinal Airpark should complete the following:

- A published approach should be provided.
 - GPS approach = \$200,000
 - Precision Approach = \$500,000 (not included in total costs)
- A weather-reporting system should be installed: AWOS or ASOS.
 - \$200,000
- High intensity runway lighting (HIRL) or medium intensity taxiway lighting (MITL) should be installed.
 - HIRL = \$45/linear foot = \$616,500
 - MITL = \$100/linear foot (design and install) = \$1,370,000 (not included in total costs)
- Visual guide slope indicators (VGSI) should be installed at the airport. This includes precision approach pathway indicators (PAPIs) or visual approach slope indicators (VASIs).
 - PAPIs = \$91,000
- Runway end identifier lighting (REILs) should be installed.
 - \$91,000
- Hangar storage should be built to accommodate 41 aircraft to satisfy current and forecasted demand (2000-2030 forecast).
 - \$15,000/T-hangar = \$615,000
- A pilot's lounge should be provided.
 - \$20,000
- Ground transportation facilities (rental cars) should be available on-site.
 - \$19,400

TOTAL COSTS = \$4,618,650

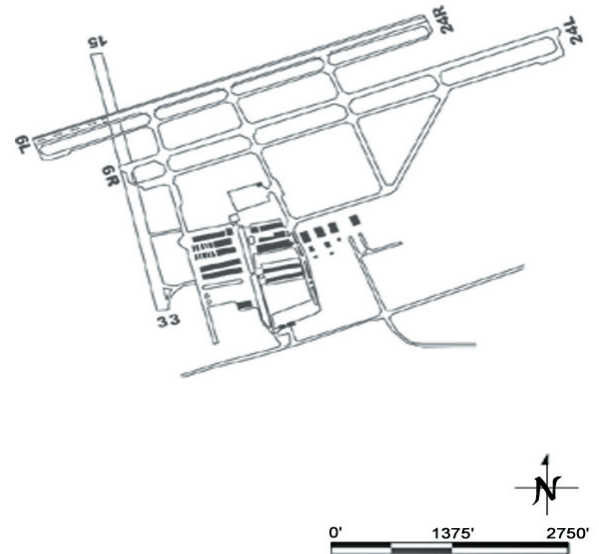
Other Airport Needs/Projects

Although Pinal Airpark intends on upgrading its maintenance facility, there are no projects or cost estimates for this airport included in the current ADOT capital improvement plan. The airpark lacks a recent master plan to serve as a source of locally generated projects for this airpark. In order to meet all Study benchmarks and facility and service objectives, total project costs identified in the RASP are \$4,618,650.

Ryan Airfield

Airport Description/Background

Ryan Airfield, located in the southwestern portion of the Tucson Metropolitan Area, serves as the primary reliever airport for Tucson International Airport. Ryan Airfield is owned by the City of Tucson and operates under the Tucson Airport Authority in conjunction with Tucson International. Ryan Airfield's three-runway system is capable of accommodating small corporate and business jets, as well as a full range of multi- and single-engine general aviation aircraft. The airport also accommodates a notable volume of flight training activity. Primary access to Ryan Airfield is via State Route 86, known as the Tucson-Ajo Highway. State Road 86 intersects Interstate 19 (I-19), which connects to Aviator Lane and Airfield Drive for access to the airfield.



Existing Airside Facilities

Ryan Airfield's primary runway, Runway 6R/24L, is 5,500 feet long by 75 feet wide. The airport is also served by a parallel runway, Runway 6L/24R, which is 4,900 feet long by 75 feet wide, and a crosswind runway, Runway 15/33, which is 4,000 feet long by 75 feet wide. Each runway is served by a parallel taxiway and a series of connecting taxiways, providing access to aircraft storage and aviation services. Runway 6R has an ILS and GPS approach, and Runway 24L is equipped with VASIs. The primary runway has medium intensity runway lighting (MIRL), but there is no taxiway lighting on the airfield. The airport also has a rotating beacon, a lighted wind cone, a segmented circle and an AWOS/HIWS weather-reporting system. Class D airspace surrounds Ryan Airfield.

Existing Landside Facilities

Ryan Airfield currently has 82,700 square yards of apron space designated for local and transient general aviation traffic, nearly doubling the RASP apron objective for their current needs. However, the airport currently only has 179 covered aircraft storage units and, according to the RASP analysis, Ryan Airfield should have 192 storage units. The airport is projected to need a total of 206 covered storage units in 2005. The airport also exhibits a deficiency in auto parking. RASP objectives illustrate the need for a total of 256 auto parking spaces now and a need for 274 spaces in 2005. The airport currently has 236 auto parking spaces. The existing terminal/administration building is 750 square feet smaller than the Level I airport landside facility objective.

Existing Services

Ryan Airfield is the only Level I airport that does not provide Jet A fuel. The airport's diverse mix of general aviation aircraft and the potential demand for Jet A fuel, in its role as Tucson International's primary reliever airport, exhibits a deficiency in the System. Ryan Airfield has a full-service FBO, provides aircraft rental, aircraft repair, avionics repair, avionics sales, flight instruction, and AvGas. The airport has a public telephone and restrooms. A 24-hour pilot's lounge is located in the administration building; each of the basic utilities are provided. A full-service restaurant is also located on the airfield. Ryan Airfield does not have an on-site rental car facility, but delivery is available upon request.

Airport Role

Ryan Airfield is a Level I airport supporting a high volume of the System's general aviation traffic. The airport is equipped with landing aids and an efficient runway/taxiway system to ensure aviation compatibility for a variety of aircraft. The airport is owned by the City of Tucson, operated by the Tucson Airport Authority, and recognized in the NPIAS as the primary reliever airport for Tucson International. A recent master plan update was completed in 1999, and an ALP update was done in 2000. The airport has identified its Part 77 surfaces; developed a recent noise contour map and an Airport Influence Area Map; and is recognized in the local comprehensive plan/vision statement.

<i>Ryan Airfield</i>	
System Role:	Level I
Sponsorship:	City of Tucson
Federal Role:	NPIAS
Master Plan or ALP:	1999/2000
FAR Part 77 Guidelines:	Drawing Adopted
Noise Contour:	Map Adopted
Comprehensive Plan / Vision Statement:	Acknowledged
Airport Influence Area Map:	Map Accepted

Airport Activity/Projected Demand

In 2000, Ryan Airfield reported 256 based aircraft and tower logs tracked 174,461 general aviation operations. By 2030, the airport is projected to have 358 based aircraft and 243,440 annual operations. This operations estimate exceeds 60 percent of the airport's available capacity. This level of demand versus capacity has been identified in the Capacity performance measure as a critical planning benchmark.

<i>RYAN FIELD</i>		
Activity Data	2000	2030
Based Aircraft	256	358
General Aviation Operations	174,461	243,440
Capacity Ratio (ASV: 355,000)	49.14%	68.57%

Recommended System Improvements

The Tucson Airport Authority has ensured Ryan Airfield is compatible with most RASP benchmarks. Ryan Airfield is in the process of planning airfield expansion and capacity improvement projects to avoid potential operational constraints by the end of the planning period. According to the RASP forecast, by 2030, this airport could experience increasing delays, and the airport should be taking action to avoid this situation. In order to comply with the Capacity performance measure, Ryan Airfield should do the following:

- Capacity planning should continue to avoid future capacity constraints.

The airport has updated current rates and charges; has local financial support; has full-time, on-site staff; has had a recent land appraisal; and has operating/minimum standards. The airport does not have a business/financial plan at this time. Ryan Airfield should accomplish the following to achieve full compliance with the Financial Responsibility performance measure:

- A Business/Financial Plan should be developed.
 - \$30,000

Recommended Facility and Service Improvements

By improving its facilities and services, Ryan Airfield will continue to be an attractive airport for a variety of users, including transient pilots and local users seeking based aircraft storage. To fulfill its System role, Ryan Airfield should accomplish the following:

- Future planning and development at this airport should consider upgrading to Aircraft Design Group Category C.
- Hangar storage should be constructed for 13 additional aircraft to meet 2000 objectives; 27 additional hangars should be constructed to meet 2005 forecast based aircraft needs; 39 additional units should be provided in 2010; 64 additional hangars in 2020; and 90 additional hangars should be constructed by 2030.
 - 15,000/T-hangar = \$195,000 (2000), \$405,000 (2005), \$585,000 (2010), \$960,000 (2020), \$1,350,000 (2030)
- Auto parking spaces should be expanded to accommodate 20 more vehicles to comply with 2000 demand levels. According to forecast data, 38 additional auto parking spaces should be provided by 2005; 54 additional spaces by 2010; 88 by 2020; and 122 additional auto parking spaces should be available by 2030.
 - One (1) space = \$384 = \$7,680 (2000), \$14,592 (2005), \$20,736 (2010), \$33,792 (2020), \$46,848 (2030)
- The primary runway width should be increased to 100 feet.
 - \$3,758,333
- High intensity runway lighting (HIRL) or medium intensity taxiway lighting (MITL) should be installed.
 - MITL on Taxiway B = \$669,700
 - HIRL = \$45/linear foot = \$495,000 (not included in total costs)
- The terminal/administration building should be expanded to 1,500 square feet.
 - \$156/square foot = \$117,000
- Jet A fuel should be provided.
 - \$153,000
- Ground transportation facilities (rental cars) should be available on-site.
 - \$19,400

TOTAL COSTS = \$6,144,281

Other Airport Needs/Projects

Within Ryan Airfield's master plan and ADOT's Capital Improvement Plan, several projects relating to the needs and recommendations of the RASP have been identified and formally documented. **Table 9-4** shows projects for Ryan Airfield currently in the planning process.

Table 9-4
CIP/MASTER PLAN PROJECTS

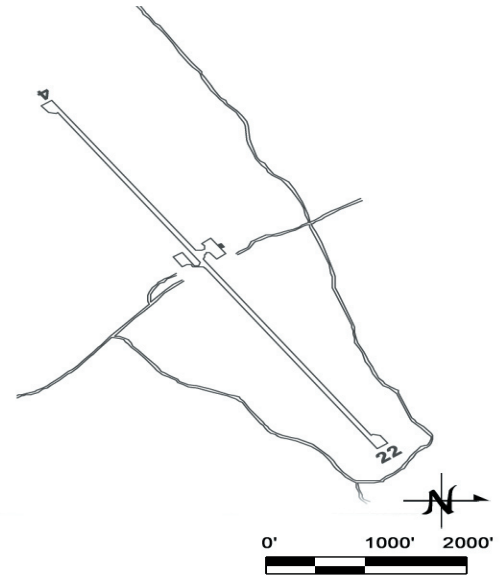
Facility and Service	Ultimate Objective	Meets Objective	Master Plan/CIP Projects		
Visual Aids	Rotating beacon; lighted wind cone/segmented circle; REILs; VGSI (VASIs/PAPIs)	YES	CIP	\$51,700	REIL on RW 24L and MIRL/HIRL on 6L/24R in 2003
			CIP	\$90,000	PAPIs on 15/33 and 6R in 2005
Capacity	Under 60% capacity in 2030	NO	Master Plan	\$1,654,000	Construct parallel Taxiway C
				\$507,000	High speed exits on RWs 6R/24L & 6L/24R
Runway Width	100 feet	NO	CIP	\$3,628,002	Widen, strengthen RW 6R/24L and TW B
Lighting	HIRL or MIRL with MITL	NO	CIP	\$669,701	MITL on TW B
				\$167,000	Install MIRL on Runway 6R/24L
			Master Plan	\$412,001	MITL on TW C
Terminal/Administration	1,500 to 2,000 square feet	NO	Master Plan	\$664,000	Construction
Fuel	Jet A and 100LL	NO	Master Plan	\$153,000	12,000 gallons
Operations/Maintenance Hangar	10,000 square feet	YES	Master Plan	\$42,000	Self-maintenance
TOTAL COSTS				\$8,038,404	

For Ryan Airfield, the RASP-related costs have been estimated at \$6,144,281 and CIP/master plan costs total \$8,038,404. Several of the CIP/master plan costs duplicate those identified as RASP projects. Cost estimates contained in the CIP/master plan that are represented in RASP cost estimates total \$4,567,403. Therefore, additional costs for RASP-related projects contained in the CIP/master plan, but not identified as RASP objectives for Ryan Airfield, total \$3,471,001. When additional master plan costs are summed with the RASP costs estimates, total costs for Ryan Airfield to enable it to meet all Study benchmarks and facility and service objectives are \$9,615,282.

Sells Airport

Airport Description/Background

Sells Airport is located on the Tohono O'odham Reservation in the central portion of Pima County. Discussions are currently underway between the Tohono O'odham and the Bureau of Indian Affairs (BIA) over who will have ownership and operational authority and responsibility. The airport is approximately 60 miles west of Tucson and can be accessed off State Route 86, known as the Tucson-Ajo Highway. Currently, the airport access road is unmarked from State Route 86 and is in poor condition. A U.S. Customs facility is adjacent to the airport. Primary use of the airport is by the U.S. Customs, occasional business clients to the area, and for emergency/medical evacuations. This airport plays an important role in serving Pima County's Native American population.



Existing Airside Facilities

Sells is a single-runway facility with no taxiways or turnarounds; the runway is in poor condition. Runway 4/22 is the longest Level II runway in the System; the runway is 5,830 feet long, but only 48 feet wide. At this time, there are no landing aids to assist pilots flying into Sells.

Existing Landside Facilities

Sells is located on 20 acres of property comprised mainly of desert land. Sells currently has 225 square yards of apron space, no covered storage, and no tiedowns. Five (5) auto parking spaces are located on the paved ramp space. Sells does not currently have a terminal/administration building.

Existing Services

The airport lacks each of the services recommended for Level II airports in accordance with RASP objectives. Sells does not have a limited-service FBO, fuel, phone, restrooms, perimeter fencing, vending, or basic utilities.

Airport Role

Sells is a low-use general aviation airport that serves an important role in the System by providing aviation access to the Native American population. The airport also meets the needs of the U.S. Customs operation adjacent to the airport. All records of this airport provide data that reveals consistent operations and based aircraft figures.

SELLS AIRPORT	
System Role:	Level II
Sponsorship:	Tohono O'odham Nation
Federal Role:	Non-NPIAS
Master Plan or ALP:	No Plan
FAR Part 77 Guidelines:	No Drawing
Noise Contour:	No Ordinance
Comprehensive Plan / Vision Statement:	Not Acknowledged
Airport Influence Area Map:	No Map

Although technically eligible, Sells is not currently included in the NPIAS. Steps should be taken to qualify Sells for inclusion in the NPIAS. The airport does not have a current master plan or ALP, has not identified its FAR Part 77 surfaces, has no current noise contour, is not acknowledged in a local comprehensive plan or vision statement, and does not have an ADOT Airport Influence Area Map.

Airport Activity/Projected Demand

RASP data identifies Sells as having zero (0) based aircraft and 1,310 general aviation operations in 2000. By 2030, the end of the RASP planning period, five (5) aircraft are projected to base at Sells and general aviation operations are expected to increase to 3,275. Current and future demand levels are not expected to reach the airport's annual operating capacity, 130,000 total operations, in the near or long term.

SELLS AIRPORT		
Activity Data	2000	2030
Based Aircraft	0	5
General Aviation Operations	1,310	3,275
Capacity Ratio (ASV: 130,000)	1.01%	2.52%

Recommended System Improvements

Several projects are necessary for Sells to meet each of the RASP benchmarks identified for the six performance measures. The airport's current and future role in the System may be somewhat less critical than other Level II airports; this conclusion is based on the lower level of activity projected to be served at this airport. As a result, a benchmark deficiency may be accepted at Sells and not at other Level II airports throughout the System. Sells is not currently recognized in the NPIAS, but should be held to the same performance standards that other NPIAS airports are expected to meet.

It is an objective of the RASP, however, to have Sells become a NPIAS airport; therefore, it is a System objective for Sells to meet applicable RSA guidelines when they receive NPIAS designation.

In order to meet all aspects of the Standards performance measure, Sells should accomplish the following:

- The airport should improve the pavement condition on its primary runway to meet a PCI rating of 80.
 - \$7.50/square yard = \$669,000

Sells does not currently meet any benchmarks related to the Compatibility performance measure. To best satisfy System benchmarks, Sells should accomplish the following to meet the established objectives for the Compatibility performance measure:

- Part 77 surfaces should be identified.
 - \$5,000
- The airport should be included/recognized in a local comprehensive plan.
 - \$2,000
- An ALP and/or Master Plan should be developed.
 - \$40,000
- The airport should have a current noise contour.
 - \$5,000

- The airport should produce an Airport Influence Area Map.
 - \$5,000

Related to the Financial Responsibility performance measure, the RASP concluded that a full-time, on-site staff is not currently needed at Sells. Further, a business/financial plan would not currently benefit the airport enough to cover its cost; a current land appraisal is also not necessary at this time. To meet benchmarks established in the RASP Financial Responsibility performance measure, Sells should do the following:

- The airport's rates and charges should be updated.
 - \$5,000
- Minimum operating and development standards should be established.
 - \$5,000
- The airport should have its land appraised for its current value.
 - \$5,000

Recommended Facility and Service Improvements

Without adequate facilities and services, Sells may be unable to fulfill its System potential. Users from Ryan Airfield claim they frequent Sells for touch-and-go practice. To meet RASP facility and service objectives, Sells should consider the following:

- One (1) aircraft storage unit should be built to accommodate based aircraft in 2005, two (2) in 2010 and three (3) in 2030.
 - 15,000/T-hangar = \$15,000 (2005), \$30,000 (2010), \$45,000 (2030)
- The apron should be expanded to at least 350 square yards in 2000, 700 square yards to meet its 2005 objective, and 1,050 square yards by 2020.
 - \$4,875 (2000), \$18,252 (2005), \$32,175 (2020)
- The runway width should be increased to 60 feet.
 - \$1,894,050
- Obstructions to the runway inside the established runway safety area (RSA) should be cleared.
 - \$5,000
- A taxiway turnaround should be constructed.
 - \$60,000
- Runway lighting should be installed; while RASP objectives call for MIRL at all Level II airports, given the volume of traffic at this airport, LIRL should suffice.
 - LIRL = \$36.00/linear foot = \$419,760
- The following visual aids should be installed: rotating beacon, segmented circle, and lighted wind cone.
 - Rotating beacon = \$50,000
 - Segmented circle = \$3,500
 - Lighted wind cone = \$4,000
- A 650-square-foot terminal/administration building should be built; given the nature of this airport, however, this should be a low priority development.
 - \$156/square foot = \$101,400

- A limited-service FBO should operate at the airport; while FBO services are certainly desirable at all System airports, the level of activity at this airport will most likely not be sufficient over the planning period to support an FBO.
- 100LL fuel should be provided.
 - Design, storage, construction = \$250,000
- Phone and restroom facilities should be provided.
 - Phone = Included in “Utilities” below
 - Restroom facilities = \$8,000
- Perimeter fencing should be installed.
 - \$200,000
- Utilities should be available.
 - Water, sewer, electric, and telephone = \$220,000
- Vending services should be provided.

TOTAL COSTS = \$4,033,885

Other Airport Needs/Projects

Although Sells could consider several projects to improve airport facilities and to satisfy System performance measures, Study benchmarks, and RASP facility and service objectives, the airport is not currently recognized in the NPIAS. Thus, Federal funds are not now available to this facility. In addition, Sells does not have a current master plan that identifies airport needs; and projects for this airport do not appear in ADOT’s most current statewide CIP for public airports in Arizona.

From a system’s standpoint, the first priority is to qualify this airport for inclusion in the NPIAS. The next steps would be to develop an airport master plan and to enter eligible projects for the airport in to ADOT’s statewide CIP. Once these initial steps are completed, the airport should then focus on addressing the specific actions and projects that have been identified for Sells in the RASP.

The Bureau of Indian Affairs developed an airstrip report to assess the cost of repairing Sells Airport’s runway. The estimated cost of repairing the runway totaled:

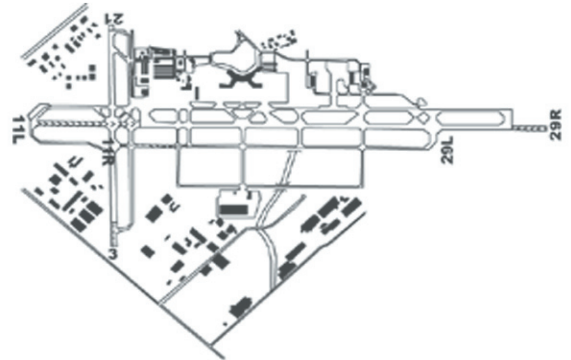
- \$35,600

When each of the RASP project costs are summed with the Bureau of Indian Affairs’ estimated runway conditioning project, the total costs for Sells Airport to meet all Study benchmarks and facility and service objectives and their runway project are \$4,069,485.

Tucson International

Airport Description/Background

Tucson International Airport, located south of Tucson's business district, supports a wide range of commercial service, air cargo, and general aviation activities; a military guard unit is also stationed at the airport. The airport can be accessed through several major north/south or east/west arterials from Interstate 10, three miles north of the airport, and Interstate 19, three miles west of the airport. The airport is owned by the City of Tucson and operated by the Tucson Airport Authority. Tucson International is the only commercial service airport in Pima County. This facility is utilized by commercial airlines, air cargo distributors, the military, small and large businesses, and recreational users.



Existing Airside Facilities

Three runways serve Tucson International. The primary runway, Runway 11L/29R, runs parallel to the secondary runway, Runway 11R/29L. The crosswind runway is Runway 3/21. Runway 11L/29R is 150 feet wide by 10,996 feet long, Runway 11R/29L is 75 feet wide by 8,408 feet long, and Runway 3/21 is 150 feet wide by 7,000 feet long. The runways are served by a system of parallel taxiways and taxilane exits that provide access between the airside and landside facilities. An ILS precision approach is accompanied by several other landing aids including: high intensity runway lighting (HIRL), PAPIs, VASIs, REILs, a rotating beacon, and a lighted wind cone. There is also a localizer and a VOR and GPS approach.



Existing Landside Facilities

Tucson International has surplus apron space for parking general aviation aircraft, with 561,500 square yards reserved for based and itinerant users, along with 650,000 square yards designated for commercial use. The airport has a total of 266 covered storage spaces, including the following: 58 conventional hangars, 147 T-hangars, and 61 shades. At this time, the RASP considers this to be an adequate number of covered storage units in relation to the number of based aircraft currently on the field. Tucson International meets the RASP auto parking objective with its 427 general aviation auto parking spaces. The general aviation terminal building is 15,200 square feet, the administration building is 14,279 square feet (meeting the suggested RASP dimensions), and there is an existing operations/maintenance hangar. These existing facilities indicate that Tucson International is meeting facility objectives that have been established for Level I airports.

Existing Services

Tucson International meets each of the service objectives set in the RASP. The airport has the capacity to store 40,000 gallons of AvGas, 300,000 gallons of Jet A fuel, and 36,000 gallons of MoGas. The airport has a full-service FBO, a full-service maintenance hangar, phones, restrooms, a flight planning lounge, on-site rental car services, a full-service restaurant, basic utilities, security fencing, controlled access, night guards, and terminal/hangar security lighting.

Airport Role

Tucson International is the cornerstone of the System. It serves as a major general aviation facility, is the only airport with air cargo facilities, and is the only System airport providing commercial airline service. It is owned by the City of Tucson, operated by the Tucson Airport Authority, and included in the FAA's National Plan of Integrated Airport Systems (NPIAS). A master plan was completed in 1996, but an ALP update was completed in 2000.

The airport has identified its FAR Part 77 surfaces, has an updated noise contour, is recognized in a local comprehensive plan/vision statement, and has an ADOT Airport Influence Area Map.

TUCSON INTERNATIONAL	
System Role:	Level I
Sponsorship:	City of Tucson
Federal Role:	NPIAS
Master Plan or ALP:	1996/2000
FAR Part 77 Guidelines:	Drawing Adopted
Noise Contour:	Map Adopted
Comprehensive Plan / Vision Statement:	Acknowledged
Airport Influence Map:	Map Accepted

Airport Activity/Projected Demand

Tucson International is a towered airport facility with accurate airport activity records. In 2000, the airport reported 320 based aircraft and 144,979 general aviation operations. Throughout the planning period, based aircraft figures are expected to remain constant. General aviation operations, however, are expected to increase to 221,750. In addition to general aviation operations, Tucson International is also expected to see growing commercial and military operations over the forecast period. Increased commercial operations will be needed to serve as many as 3.9 million boarding passengers that could use the airport by 2030. The airport has already reached a critical demand versus capacity ratio of 66 percent and has begun the planning process to increase its total annual service volume potential. If alterations are not made to the airport to increase its operating capacity, Tucson International's annual operational demand will exceed 91 percent of its total operational capacity by 2030, creating potentially long delays.

TUCSON INTERNATIONAL		
Activity Data	2000	2030
Based Aircraft	320	320
General Aviation Operations	144,979	221,750
Capacity Ratio (ASV: 380,000)	66.04%	91.59%

Recommended System Improvements

Tucson International complies with almost all benchmarks used in the RASP. At this time, Tucson International is the only Level I airport with operational constraints from airspace restrictions. The RASP has acknowledged and accepted these restraints because they are a result of Tucson International's

proximity to Davis-Monthan Air Force Base. The Study also identifies that Tucson International has reached the critical 60 percent demand/capacity ratio and should, therefore, be planning to increase its total annual service volume. In order to comply with the Capacity performance measure, Tucson International should accomplish the following:

- Capacity planning should continue in order to avoid reaching the 80 percent demand/capacity threshold by 2010.
- The airport should proceed with near-term plans to increase its operational capacity through its ongoing runway/taxiway projects.
- The airport should continue to project and plan for the development of a new northeast parallel runway in the long term, most likely beyond the 30-year planning horizon for this RASP.
 - \$40,000,000

Tucson International Airport's most recent master plan was completed in 1996. Although the airport meets the RASP compatibility objectives for a recent master plan, it will be outdated in the short term. In order to maintain System compatibility in the future, Tucson International plans on updating their master plan in 2003. The RASP supports Tucson International's plan to update their master plan in 2003.

Recommended Facility and Service Improvements

Currently, Tucson International meets each of the suggested facility and service objectives for Level I airports established in the RASP. Tucson International's 1998 General Aviation Strategic Plan projects a higher number of based aircraft than identified in the RASP. To meet this need, as well as to replace hangars at the airport that have outlived their useful lives, the RASP supports the airport's plans for hangar development. Although there are no recommended facility and service improvements from a System's perspective, it should be noted that more specific airport planning has been done for Tucson International, and additional hangar storage may be necessary in this planning period.

TOTAL COSTS = \$40,000,000

Other Airport Needs/Projects

ADOT's capital improvement plan identifies three needs/projects the airport should consider for general maintenance or to improve the level of service provided at the airport. Although several projects are identified in Tucson International's master plan, there are currently no projects in the master plan that relate to the performance measures, benchmarks, and facility and service objectives identified in the RASP, with the exception of the previously noted capacity-enhancing project. The following table, **Table 9-5**, lists each of the RASP-related projects and their estimated costs.

Table 9-5
CIP PROJECTS

Facility and Service	Ultimate Objective	Meets Objective	CIP Projects		
Capacity	Under 60% capacity	YES	CIP	\$2,216,699	High speed taxiway exit
Capacity	Under 80% capacity	NO	Master Plan	\$40,000,000	Construct new Runway 11R/29L, redesignate existing Runway 11R/29L as a taxiway
				\$5,760,000	Relocate Taxiway C
Approach	Precision or nonprecision	YES	CIP	\$40,000	VHF TVOR in 2002
Security	Fencing, controlled access, night guard, terminal/hangar security lighting	YES	CIP	\$275,000	Fence newly acquired properties in 2003
Apron	25% of based; 50% of transient	YES	CIP	\$1,800,000	Terminal apron reconstruction in 2003
Total Costs				\$47,875,000	

For Tucson International, the RASP-related costs have been estimated at \$40,000,000 and CIP/master plan costs total \$47,875,000. The only RASP cost estimate was taken directly from Tucson International's CIP, thus duplicating a cost of \$40,000,000 from total CIP/master plan estimates. As a result, additional costs for RASP-related projects contained in the CIP/master plan, but not identified as RASP objectives for Tucson International, total \$7,875,000. When additional master plan costs are summed with the RASP costs estimates, total costs for Tucson International to complete each of the RASP-related CIP/master plan projects and RASP recommendations is \$47,875,000.

Cost Summary

Significant Federal, State, local, and private investment will be required in the coming years to enable the System airports to meet objectives established in this Study. Costs outlined in this final chapter of the RASP, in reality, reflect only a fraction of the costs that will be incurred to maintain, operate, and improve the PAG System in the coming years. These costs do, however, provide an estimate of the investment that will be needed, by airport, to enable the System to meet RASP-established objectives for System performance.

The System costs to meet the RASP objectives are summarized below. These costs represent a blend of RASP and master plan/ADOT CIP based costs for each airport.

- Ajo Municipal
 - \$2,340,730
- Benson Municipal
 - \$3,702,000
- La Cholla Airpark
 - \$803,400
- Marana Northwest Regional
 - \$59,320,476
- Pinal Airpark
 - \$4,618,650
- Ryan Airfield
 - \$9,615,282
- Sells
 - \$4,069,485
- Tucson International
 - \$47,875,000

TOTAL SYSTEM COSTS = \$132,345,023

Summary

The PAG System of airports serves a dynamic and growing area of Arizona. The RASP provides a comprehensive evaluation of this System's current performance and of how this System will need to be enhanced in the future to meet the Region's growing aviation needs. The PAG RASP is a top-down study that must now be implemented from the bottom up. Individual airport acceptance of the recommendations contained in this Study is vital to the ultimate success of the RASP. As individual airports in the PAG System plan for the future, their individual master planning efforts and CIP updates should encompass their airport-specific RASP recommendations. When the PAG RASP is again updated in five to seven years, the System's ability to move toward and meet the objectives established in this RASP can be measured and evaluated.

